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ABSTRACT

This study compared students in Berkeley's four postgraduate teacher education programs, which are a) student teaching--elementary; b) elementary internship; c) student teaching--secondary; and d) secondary internship. The impact of each curriculum on the students was investigated through the Terman Concept Mastery Test, Omnibus Personality Inventory (OPI), Strong Vocational Interest Blank, and Crossman Q Sort. Biodata were secured upon entry into one of the programs, and the OPI and the Q Sort were readministered upon completion of the program. Findings revealed that the two intern programs had a) more minority students; b) older, married students; c) math and science majors; and d) students with long-term professional goals. All held liberal attitudes toward teaching and learning. On the OPI posttest, all four groups changed. The interns more than the student teachers changed in liberal direction. The secondary interns changed in a more conservative direction. The Q Sort revealed that all groups scored on the progressive education side, with the two internship groups moving significantly in a progressive direction. (The appendixes include sampling procedures, demographic data, instructions for the Q Sort, and the correlation matrix for OPI and Q Sort. Thirty tables of statistical data are included along with seven figures and one chart.) (Author/BRB)

Table of Contents

Chapter		Page
1	Introduction	1
2	The Programs	11
3	Demographic Characteristics of the Subjects	30
4	Personality Characteristics	45
5	Attitude Toward Teaching	76
6	Summary and Conclusions	98

Appendices

I Sampling Procedures

II Demographic Data: GIP, 1956-64 vs. 1969-70

III Instructions for the Crossman Q-Sort

IV Crossman Q-Sort Items

V Q-Sort Pre- and Post-Test, by Items

VI Correlation Matrix for OPI and Q-Sort

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List of Tables

Table		Page
I	Racial Origin of Regular and Intern Students	30
II	Test for Mean Ages	31
III	Sex of Student and Intern Teachers	32
IV	Marital Status of Student and Intern Teachers	32
V	Number in Program Who Had Children	33
VI	Birthplace of Trainees	33
VII	Father's Occupation of Regular and Intern Students	34
VIII	Mother's Occupation of Regular and Intern Students	34
IX	Highest Educational Level of Fathers of Regular and Intern Students	35
X	Highest Educational Level of Mothers of Regular and Intern Students	35
XI	The Means By Which the Regular and Intern Students Found Out About the Program	36
XII	The Professional Goals of the Students in the Four Curriculums	37
XIII	Highest Degree Held at Time of Entry into Program	37
XIV	Types of Institutions Granting Entry Degree	38
XV	Extent of Travel Prior to Entry	38
XVI	Teaching Fields at Time of Entry Into Program	39
XVII	Elementary Level Terman Concept Mastery Scores and Grade Point Averages	41
XVIII	Secondary Level Terman Concept Mastery Scores and Grade Point Averages	42

List of Tables (continued)

Table		Page
XIX	Elementary OPI Pre-Test Scores	52
XX	Secondary OPI Pre-Test Scores	54
XXI	OPI Scores: Pre-Test versus Norm	59
XXII	Changes in Elementary OPI Scores	64
XXIII	Changes in Secondary OPI Scores	67
XXIV	All Groups Pre-Test	72
XXV	All Groups Post-Test	74
XXVI	Cluster Analysis of the Q-Sort	79
XXVII	Elementary Pre-Test Q-Sort Cluster Scores	85
XXVIII	Secondary Pre-Test Q-Sort Cluster Scores	87
XXIX	Changes in Elementary Q-Sort Cluster Scores	91
XXX	Changes in Secondary Q-Sort Cluster Scores	94

List of Charts and Figures

Chart		Page
1	Outline of the Four Curriculums	12

Figure		
1	Mean Scores on the Strong Vocational Interest Blank of Students in the Four Programs	3a-g
2	Elementary OPI Pre-Test Profiles	52
3	Secondary OPI Pre-Test Profiles	56
4	Pre-Test Inter-Group Comparisons	71
5	Post-Test Inter-Group Comparisons	73
6	Elementary Q-Sort Pre-Test Cluster Profiles	86
7	Secondary Q-Sort Pre-Test Cluster Profiles	88

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Intern Teachers and Student Teachers at the University of California, Berkeley: A Comparative Study

James C. Stone

SP 00 7 410

Dedication

TO William A. Brownell, dean emeritus of the UCB School of Education--an internationally known thinker and doer of teacher education, most especially the four programs studied in this investigation.

Acknowledgement

Grateful acknowledgement goes to J. Robert Howden and Anita Schader Garland who assisted in the study, and to Douglas A. Penfield and William J. Schwarz who critically reviewed earlier drafts of the manuscript.

Chapter I Introduction

Beginning in the early 1950's innovation became the "by-word" in teacher education. The movement was initiated by "venture capital," chiefly from the Ford Foundation, and given to prestigious institutions largely for M.A.T.-internship-type curriculums.[1] The expected ruboff from these prestigious colleges and universities to the "run of the mill" institutions which prepare the bulk of the nation's teachers simply did not occur, but these Ford funded programs did have a marked effect on the U. S. Office of Education when the Federal government became the "great provider" of venture capital beginning in the middle 1960's. Under the Educational Professions Development Act, M.A.T.-internship curricula initially were given top priority. Gradually that emphasis changed to any innovative program which focused on new or different ways to prepare teachers of disadvantaged youth, and particularly programs which recruited and trained teachers from minority group populations.

At the base of all these efforts, representing millions of dollars over a twenty year period, were two overriding, prevailing, and pervasive opinions about teacher education:

1. Something is desperately wrong with teacher preparation that is carried on in the traditional way.
2. Something is automatically right with teacher preparation that is carried on in an innovative, "new," different, or "experimental" way.[2]

Let us briefly examine these two assumptions.

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[1]James C. Stone, Breakthrough in Teacher Education, San Francisco: Jossey-Bass, 1968.

[2]James B. Conant, The Education of the American Teacher, New York: McGraw-Hill, 1963.

Assumption #1

Following Sputnik, critics of American education, beginning with the Bestors, the Rickovers, and the Koerners, charged repeatedly that the schools had failed and placed the blame on the teachers' lack of adequate preparation in subject matter. Evidence was marshalled from studies showing the proportion of the teacher's undergraduate preparation in "subject matter" and "educational methodology." What about the significance of the evidence? Little or no evidence was produced to show the relationship between this deficiency and teaching competence. It simply was the "given" of the times. It ushered in the precollegiate curriculum reform movement which touched every school district in the nation and every teacher education institution. In California, for example, much was made of the legislative changes, AD 1960, which eliminated Education as a major for prospective teachers and set limits on Education methods courses in deference to the agreed need for increased subject matter.[3] It seems safe to generalize that the critics were so sure of what was wrong with teacher education that research evidence on the point was unnecessary and irrelevant.

Assumption #2

While the Ford Foundation was remise in demanding evaluations of its innovative programs,[4] a few substantive ones were published. Once the Federal government entered the scene, however, increasing importance in giving grants was placed on a well-conceived evaluative research component.[5] Of the many researches generated, by far the bulk have been process evaluation.[6] The

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[3]James C. Stone, "Teacher Education by Legislation," Phi Delta Kappan. Vol. XLVII, no. 6, (Feb. 1966), pp. 287-291.
[4]Stone, ibid., p. 169-171.
[5]James C. Stone, Teachers for the Disadvantaged, S.F.: Jossey-Bass, 1969.
[6]Bernard R. Corman and Ann G. Almsted. The Internship in the Preparation of Elementary School Teachers. College of Education, Michigan State University, 1964.

curricula were assessed in terms of the extent to which they achieved the purposes established for them. The means to attain these ends were carefully described and analyzed in considerable detail. In addition to this, some researches described the subjects (trainees) at the beginning and end of the innovative experience, and sought to provide evidence of their competence in the classroom. Thus, for example, the internship program for the preparation of secondary school teachers at the University of California, Berkeley, was evaluated with data about the interns who were followed six years after initial preparation.[7] Important as this and similar studies have been in contributing data on the training process and its impact on a selected group of subjects, it throws little light on any comparison between those prepared in a traditional program and those prepared in an innovative one.

Ideally such a comparative study should include contrasting the subjects in training programs as well as through a followup into the field. The present study falls short of this ideal. Because of fund limitations, no professional in-the-field followup was made.[8] The present investigation focuses exclusively on the trainees during their year of graduate professional preparation.

Programs:

At the time of this investigation, the University of California-Berkeley, maintained four separate and purportedly distinct teacher education programs, each of which is described in detail in Chapter II, but here are identified at this point to wit:

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[7]James C. Stone and Clark N. Robinson, The Graduate Internship Teacher Education Program. Berkeley and Los Angeles: The University of California Press, 1965.

[8]The Oakland Schools conducted a followup study of the 1969-70 elementary intern group, comparing them with regularly prepared teachers. No significant differences were found between the two groups--interns and regulars. "A Report of the Internship Program for Elementary School Teaching," Oakland Public Schools, 1970 (mimeographed).

1. a graduate, fifth-year, professional program for prospective elementary school teachers which emphasized a year of student teaching experience, coupled with courses, seminars, and workshops.
2. a graduate, fifth-year professional program for prospective secondary school teachers similar to number 1.
3. a graduate, fifth-year professional program for prospective elementary school teachers which emphasized a year of full-time internship teaching experience, coupled with courses, seminars, workshops, and a special summer session.
4. a program similar to number 3 for prospective secondary school teachers.

Each of these four programs was predicated on a set of beliefs regarding (1) the uniqueness of the interests, backgrounds, attitudes, and abilities of the students recruited for and selected for the programs, (2) the uniqueness of the experiences provided by the curriculum and teaching staff, and (3) different results in terms of beginning professional competence.

Purpose:

The purpose of this investigation was to compare the trainees admitted to the four programs and to assess the impact of the several curricula on the trainees themselves.

Questions to be investigated:

1. What personality traits, attitudes, interests, and intellectual achievement characterize students in the four programs at the time of admission?
2. What characteristics of the students are differentially distributed among the several programs?
3. Do the personalities and attitudes of trainees in the four curriculums change as a result of a fifth-year of graduate professional training?

Method:

Random samples of 30 trainees were drawn from each of the two graduate intern programs and random samples of 15 from each of the regular fifth-year programs. Early in the first summer, following final selection for a program, the subjects were pre-tested using the following instruments:

Terman Concept Mastery Test

Omnibus Personality Inventory

Strong Vocational Interest Inventory

Crossman Q-Sort.

Biodata on the subjects were secured prior to entry into the program of choice. The OPI and the Crossman Q-Sort again were administered the following summer, after the completion of each program. The research design is shown below:

Dependent (Assessed) Variables	Independent (Assessed) Variables
Demographic Questionnaire	Regular Elementary Program
Terman Concept Mastery Test	Intern Elementary Program
Strong Vocational Interest Blank	Regular Secondary Program
Omnibus Personality Inventory	Intern Secondary Program
Crossman Q-Sort	

Analysis of Data:

Chi square was used to analyze the significance of various demographic comparisions among the subjects. The CALIF Miltivariate Analysis of Variance test was used to analyze mean scores on various scales of the OPI. The Q-sort responses were analyzed by the BCTRY program of cluster analysis and the variance in cluster scores was analyzed by the CALIF program of multivariate analysis.

Hypotheses:

The following hypotheses were postulated:

1. Trainees in the two internship programs will differ significantly from those in the two student teaching programs in background, personality characteristics, and attitudes towards teaching, as measured by the demographic questionnaire, the Omnibus Personality Inventory, and the Crossman Q-Sort.

This hypothesis is based on the published aims of the two internship programs which are to recruit (1) mature candidates for teaching, (2) those who make a late decision to enter teaching, (3) those normally not interested in traditional programs, and (4) persons who are "ready" for a more intensive, realistic, and more extensive type of teacher preparation, which internship programs are designed to provide.

The hypothesis also is based on research studies which indicate that trainees in internship programs in fact (1) have been older than those in conventional programs, (2) were repelled by the traditional programs available to them, and (3) would not have entered teaching without the "earn while you learn" feature which a paid internship teaching responsibility offered.[9]

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[9] Op. cit., p. 156-157.

2. Trainees in the two internship programs will not differ significantly from those in the two student teaching programs in intellectuality or vocational interest, as measured by the Terman Concept Mastery Test and the Strong Vocational Interest Blank.

This hypothesis is based on the assumption that the four programs are post-baccalaureate fifth-year curriculums, based on the holding of a bachelor's or higher degree from an accredited institution, and the completion of an acceptable major. While, normally, the interns will not have had any work in Education prior to admission, this difference is hardly measurable. Since all four programs require the same minimum GPA, there is no reason to suppose that any one of the curricula gets a higher mix of intellectual types than any other. The hypothesis also is based on research which indicates that students in vocational or professional fields have interests and characteristics in common which transcend other measured considerations.[10]

3. Trainees in the two internship programs will differ significantly from those in the two student teaching programs in the amount and direction of change resulting from the impact of their curricular experiences, as measured by the Omnibus Personality Inventory and the Crossman Q-Sort.

This hypothesis is based on the assumption that although alike upon entry in intellectuality and vocational interest, the internship program's more intensive, more extensive, risk-taking, "being on your own " characteristics will have a greater impact on the trainees than will the less intensive, slower paced, more gradual induction into teaching, and more closely supervised, characteristics of the traditional curricula.

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[10] Laura C. Dustan, "Characteristics of Students in three types of Nursing Education Programs." Unpublished doctoral dissertation, University of California, Berkeley, 1959. E.D. Farwell, "Diversification in Undergraduate Agricultural Education in Selected Institutions." Unpublished doctoral dissertation, University of California, Berkeley, 1969.

Research evidence that internship program "graduates" have been appraised by school administrators as "superior" to teachers trained in student teaching curricula is also a factor in support of this hypothesis.[11]

4. Trainees in the two elementary teacher preparation programs will differ significantly from those in the secondary programs at both admission and program end, as measured by the Crossman Q-Sort and the Omnibus Personality Inventory.

This hypothesis is based on the assumption that students who are more child-centered elect to teach in the elementary schools while those who are subject matter centered elect to teach in secondary schools.

There is also some research evidence from studies of elementary school teachers which shows them to be "warm," "emphathetic," "loving," persons in contrast to those teaching at higher levels who are more "authoritarian," and more interested in dispensing "knowledge" of the subject in which they have prepared to teach, and less concerned with students as such.[12]

Sample:

The samples of subjects initially selected for this investigation were considerably larger than those ultimately used. Fifty regular elementary and fifty regular secondary student teachers were originally selected using tables of random numbers from those entering the programs in the fall of 1969. Only twenty-eight in the elementary and thirty-two in the secondary samples actually participated in any pre-tests, and only fifteen elementary and eighteen secondary subjects completed the post-tests as well. To yield equal sample sizes, three subjects were dropped at random from the latter group.

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[11] Op. cit., p. 83-87.

[12] David G. Ryans. The Characteristics of Teachers. Washington, D.C.: The American Council on Education, 1967.

It is reasonable to assume that the same influences caused some individuals to miss the post-tests as caused others to miss the pre-tests, particularly since an attrition of approximately fifty percent occurred for both groups at both stages of testing. Hence, the similarity of the sub-samples used in the study to the full group were tested by comparing them with the group that completed only the pre-test on the important demographic and personality variables.

Tables XX and XXI in the Appendix show there are no significant differences between the two sub-samples consisting of those "in" the study and those "out" of the study. Thus, confidence can be attributed to the decisions based on the two samples of size fifteen used in this assessment.

For the two internship programs, all of the participants entering in the fall of 1969 were in the original samples. Thirty-one of forty-six elementary interns and thirty-two of seventy-two secondary interns completed the testing. Again, subjects were dropped at random for equal numbers and to make the samples proportional to the two samples from the regular programs. On tests similar to those performed on the regular program samples, there were no significant differences between the two sub-samples consisting of those "in" the investigation and those not included in it.

While the samples appear to be consistent with total trainees in each of the four curricula, it was apparent to the investigators that cooperation was more readily secured from the two internship programs both from trainees and staff. This may be a function of the closer knit nature of the internship programs, (see page 17,25), or it may be that those associated with the two older, longer-established regular programs simply had lost patience with requests for data collection for which they so often have been the "victims."

Following a description of the four curricula (Chapter 2), is a description of the demographic characteristics of the subjects (Chapter 3). The chapters on personality characteristics (4), and attitude toward teaching (5), complete the analysis of the data. The findings are summarized and implications are discussed in the final chapter.

Chapter 2 The Programs

In this chapter, the four teacher education programs will be described, noting their similarities and differences. The two elementary curriculums--student and intern teaching--will preceed the two secondary curriculums--student and intern teaching. Often the two student teaching programs also will be referred to throughout the report as "regular" or "traditional" programs, and the secondary intern group also will be referred to as the GIP (Graduate Internship Program). Chart 1 shows a comparative view of the four curriculums.

Elementary Student Teaching Program

The regular Elementary Program has been offered at Berkeley since 1940. It was originally a 4 1/2 year program which was extended to a full 5 years in 1960. Although the curriculum is essentially a post-baccalaureate fifth-year professional program of teacher preparation, it actually begins in the junior year. This is necessary in order that the candidate will have completed the prerequisite courses required for admission at the graduate level. The prerequisites include University of California, Berkeley, courses (or their equivalents at other institutions) in the following:

Music 10A and 10B	Basic Musicianship
Mathematics 15	Concepts of Mathematics for Elementary School Teachers
Physical Education 12	Elementary School Activities: Games, Dance and Movement,

plus a major in a subject matter field which is "commonly taught" in the elementary schools of the state. Students are encouraged also to have taken either or both Education 110 (Learning and the Learner) and 130 (The School

Figure 1 OUTLINE OF THE FOUR CURRICULUMS*

	1st Summer	ACADEMIC YEAR Fall	Winter	Spring	2nd Summer
Regular Elem.		Student Teaching (3) Foundation Courses (6) C and I courses (6)	Student Teaching (4) C and I courses (9) Individual Project (3)	Student Teaching (8) C and I course (3) Individual Project (3) (Total 45)	
Intern Elem.	Student Teaching (3) Individual Projects (11)	Full-Time Teaching** (4) C and I course (3)	Full-Time Teaching (4) C and I course (3)	Full-Time Teaching (4) C and I course (3)	Foundation Courses (6) C and I course (3) (Total 44)
Regular Secondary		Student Teaching (4) Foundation Course (3) C and I course (3) Academic Course (3)	Student Teaching (4) Foundation Course (3) C and I course (3) Academic Course (3)	Student Teaching (4) Academic Course (3) C and I course (3) (Total 36)	
Intern Secondary	Student Teaching (9) Seminar (2)	Full-Time Teaching*** (3) Seminar (2)	Full-Time Teaching (3) Seminar (2)	Full-Time Teaching (3) Seminar (2)	Academic Courses (9) (Total 36)

*Numbers in parentheses are quarter units of University credit.
**School District pays 7/8ths of a regular beginning teachers salary.
***School District pays 100% of a regular beginning teachers salary.

in America) or equivalent psychological and sociological foundations courses; otherwise these are required as part of the fifth-year program.

Selection:

Applicants must apply to the Graduate Division of the University of California, Berkeley, by May 15th for fall acceptance. Only those with at least a 2.5 grade point average in upper division work are accepted. Applicants are interviewed by an elementary supervisor. One interview usually is sufficient if the candidate is a clear "accept" or "reject." Questionable applicants are interviewed by the Program Coordinator. In all, approximately 200 are admitted annually. Those accepted without having completed the required prerequisites attend summer session to make up their deficiencies.

Academic Year:

A student teaching experience is required in each of the 3 quarters of the academic year, on an increasingly intensive and extensive basis. Typically the experience is two full days the first quarter, three full days and two half days the second quarter, and four full days the final quarter. Immediate and direct supervision is given by the master teacher in whose class the University student is doing teaching practice. Because both the quality and quantity of the experences is dependent on the master teachers, they are carefully selected by University supervisors in cooperation with school principals and the district personnel director. Supervision for both student and master teacher is given by the University supervisor on a once-every-two-weeks basis, on the average. Obviously, "strong" student teachers are seen and evaluated less often than "weak" ones.

During the fall quarter a course in educational psychology is offered and curriculum courses in language arts--reading, music, and art. During the second

quarter, a course in educational sociology and curriculum courses in science and mathematics are offered. During the third quarter a course in social studies is offered. Optional is one on the teaching of foreign languages; all other curriculum courses offered are required.

The program is scheduled in "blocks," i.e., the courses are offered only for students in this particular program and are designed especially for them, and offered at times when the candidates are not involved in student teaching. Some of the courses are offered at a school site. They are taught by professors in the School of Education who are specialists in the particular area but who are not involved in the supervision of the student teaching experience. Those responsible for the student teaching program are the Supervisors of Teacher Education. In addition to their supervision responsibility, they offer each quarter instructional workshops and special problem centered seminars for those whom they supervise. The program ends in June and students receive a Standard California Elementary School Teaching Credential.

Elementary Intern Program

Mimeographed information packets are sent to potential applicants by the Oakland Public Schools who are partners with the University in the operation of the Program. A special effort is made by the District's Personnel Office to get information about the Program to minority groups in the community since priority in admissions was given to blacks and Chicanos, particularly men.

To be considered for acceptance, the applicant must have completed his bachelor's degree in an accredited institution, and must have had little or no previous work in Education. Minimum grade point averages are advertised as a 2.5, but are waived in the case of minority representatives who otherwise are considered especially well qualified. Priority is given to applicants

who have demonstrated an interest in inner city cultural problems. Three letters of reference are required with the application.

The most promising "paper" applicants are interviewed by a representative from the Oakland Personnel Office and University supervisors. A supervisor and Oakland administrator individually interview and rate each one. In case of differences in ratings by the two, the Program Coordinator also interviews the applicant.

A screening list is prepared of those applicants acceptable to the Oakland Personnel Office and the University of California. Interested principals in the District interview applicants on this list and make their selection based on their job vacancies and the applicants' qualifications for that specific vacancy. No candidates are accepted into the Program unless they are offered and accept a contract for employment from the school district, prior to the opening of the Program, on or about June 15th each year.

Pre-Internship Summer Session (two 6 week periods):

The Program starts in the University's regular first summer session. Student teaching in an Oakland vacation or summer school is done for six weeks (A.M.). Curriculum and methodology seminars are carried on in the afternoons. These are followed by workshops and seminars in the second regular summer session. This latter experience is open for creative content and approaches which will bring about the greatest degree of preparation for the initial teaching experience coming in the fall quarter.

Internship Teaching:

A year of full-time teaching begins with the opening of the public schools in September, during which time the Oakland schools and the University share the responsibility for guidance and growth of the beginning intern. The University fills this role by holding curriculum classes on campus each Saturday morning, and also by providing a "team leader," the designated name for the University staff supervisor whose responsibility is to provide an in-service guidance and growth program for a group of six to eight interns and to otherwise assist each intern in every possible way. In addition to two University staff serving as team leaders, the school district also designates key teachers to serve in this capacity for other groups of six to eight interns. The salary of team leaders (with the exception of those who are a part of the University's regular staff) is paid by means of a one-eighth deduction from each intern's salary (of the six to eight he is working with). If this does not meet the released teacher's (team leader's) normal salary, the Oakland District makes up the salary difference from Federal funds (EPDA) which were provided to partially support this innovation in teacher preparation.

Post-Internship Summer Session (6 weeks):

After a year of successful teaching performance in the district, the intern returns for a final six-week summer session of course work. At this time, upon the recommendation of the University, he receives a regular California teaching credential.

Program Rationale:

The Elementary Intern Program has been evaluated both formally and informally and modified since its inception in 1964. Its rationale since that time has also undergone change.

An assumption for this program is that many undergraduate students are potentially fine teachers, but do not prepare themselves for a teaching career. Likewise, of these potential teachers, there are those who achieve an A.B. degree and prepare for occupations other than teaching. Somewhere in their life experiences, a number of these graduates later become interested in teaching and take part in occupations involving teaching and guidance of children. The Elementary Intern Program allows these people an opportunity to capitalize upon their experience in working with children and at the same time re-enter a formal University program to gain background knowledge in curriculum, methods of teaching, child psychology and the understanding of the school as a part of American society.

In the returning student role, the intern is usually a different human being than the newly graduated person who has "prepared" to be a teacher. A program such as this is designed for a more worldly person who is quite sophisticated in his understanding of society. Because the Elementary Intern Program candidates are not products of a traditional teacher education program, they tend to display a variety of philosophies and special abilities. They represent various ethnic groups and socioeconomic levels. Because they have been involved in community service activities prior to entry in the program, they generally are more aware of the unique needs of minority and disadvantaged groups.

The Elementary Intern Program was initially designed to prepare minority group teachers, particularly men, to work successfully in low socioeconomic and multi-ethnic communities. The function broadened to include the concept of an internship program as one (of several) good methods of preparing teachers.

Basic Aims of the Program:

1. To bring liberal arts graduates possessing high personal and academic abilities into teaching and leadership positions in economically, socially, and ethnically differing areas.

2. To offer an opportunity to meet individual needs, differences and capabilities during the initial teaching-learning processes.

3. To provide an opportunity to integrate training theory and practice.

4. To provide meaningful, concurrent curriculum courses that are not given in isolation of practice.

5. To give the intern an earning basis during his fifth year of graduate work.

6. To give extra assistance during the early learning period when most needed, by a staff which is responsible for teaching and supervision during the entire program.

7. To offer cooperative planning and performance evaluation with school district personnel.

8. To provide an alternate route to certification--a choice.

9. To offer encouragement and support for minority recruitment and retention.

10. To provide an opportunity, financially and structurally, for more men to enter the teaching profession.

Strategies for attaining program objectives:

1. One to six staffing, where the "team leader" (intern supervisor) is free to devote all of his time to the job of guiding and assisting the intern is designed to give more personalized and in depth help.

2. With the "student" load set at six to eight, the team leader is able to spend time in the community and demonstrate in the classroom to a far greater extent than possible in other circumstances.

3. Course work in curriculum emphasizes teaching strategies especially designed for "disadvantaged children".

4. Periodic meetings involving cooperation with public school personnel and district administration regarding the policy aspects of the program.

5. Growth and/or the need for change is under constant scrutiny and evaluation. Thus changes can be brought about on-the-spot and on-the-job, without waiting for another year's group of interns. The evaluation is formal and informal, coming from interns and district, as well as intern staff.

6. Former interns are used as resource persons, "big brothers" in the school to present interns and for newly accepted applicants, and prior to starting the program, are used for observation and conferencing.

7. The summer program is especially designed to get the intern started. It includes student teaching for six weeks under carefully selected master teachers. There are seminars and workshops to give curriculum knowledge and methodology. Other workshops include visitation in the community and the opportunity of making teaching aids to assist in starting out in the fall.

8. Team leaders have a weekly meeting to serve as an in-service course for them, in helping interns and in skills of effectively working and communicating with interns.

9. Special seminars and course work content include multi-racial and ethnic relationships.

10. Seminars on human relations and leadership are held, dealing specifically with conflict in the schools.

11. Video-taping in the classrooms of interns with followup, self-analysis and conferencing.

12. Interns are encouraged to use creative approaches in teaching, such as:

    a. The use of photography as a vehicle for the development of self-esteem

    b. The use of new materials to include the history of Black Americans and Americans of other minority groups

    c. The individualized approach to learning

    d. The multi-media approach to learning

    e. Photography by children as they explore their environment.

13. Resource people from the local community are utilized to contribute toward a better understanding of the community in which the intern finds himself.

14. "Idea Fairs" are held periodically to give the interns an opportunity to share teaching strategies and curriculum materials and ideas with one another.

Secondary Student Teaching Program

The regular secondary program was initiated at Berkeley in the 1920's. It has been a five-year program since its inception, with professional preparation beginning in the junior and senior years (approximately 9 quarter

units) and heavily emphasized in the fifth year, while academic preparation is heavily emphasized in the undergraduate years and capped in the fifth year with at least 9 quarter units of graduate work in the candidate's major field of teaching.

Students entering the program at the graduate level who have not taken at least 9 quarter units of Education as undergraduates are required to attend summer session to take those units prior to beginning the fifth year program in the fall. This is necessary because the fifth year is usually taken up with 12-15 quarter units of work in the teaching major in order to qualify for a University recommended credential. A unique system of "subject representatives" was designed to assure adequate preparation in the major. The subject representative is appointed by the appropriate academic department to guide students in their major teaching field preparation and to verify its completion to the School of Education as a basis for state certification. The Berkeley program is considered especially strong in the teaching majors offered in English, the social sciences, the physical and biological sciences, mathematics, and foreign languages, art, music, and physical education. These represent the teaching areas for most of the approximately 300 candidates who are accepted for the regular secondary program each year.

Selection:

As in the regular elementary program, candidates apply to the Graduate Division and those with at least a 2.5 in their major are referred to the School of Education. Candidates are interviewed by the Supervisors of Teacher Education for acceptance. The secondary supervisors are subject specialists in the various curricular areas of English, social studies, science, foreign languages, mathe-

matics, art, music, and physical education. Each subject area has a quota for the approximate number of candidates to be accepted (depending on the number of supervisors assigned to each field on an 18-1 ratio) and each group of subject matter supervisors selects its own candidates, usually through individual and/or group interviews.

Academic Year:

As in the case of the regular elementary program, student teaching is required each quarter, with mornings generally devoted to the student teaching of two class periods in a nearby secondary school. The student teachers follow the public school calendar and switch student teaching assignments at the end of the first semester. Usually the second semester is an assignment in the candidate's minor teaching field. Typically the assignment of the two semesters will vary between a junior and a senior high school experience. Immediate and direct supervision is provided by the master teacher in whose classroom the student teacher engages in teaching practice. University supervisors visit and evaluate on an average of once every two weeks. Secondary supervisors exercise the same careful selection and supervision of master teachers as described in the regular elementary program. In addition, in alternate years, the secondary supervisors offer a non-fee 3 quarter unit seminar on supervision for master teacher, their department heads, and their principals.

In addition to the academic courses in the major and minor, the students participate in a methods course in their major, also one in their minor, and seminars on teaching problems. The methods courses and the seminar instruction are given by the subject supervisor who also supervise the teaching practice assignments. Upon the joint recommendation of the subject representatives and

the secondary supervisor of teacher education, the candidates who have completed the requirements qualify for a standard California credential and are awarded a "Certificate of Completion" by the University.

The Graduate Internship Program (Secondary)

Known as the GIP, the program was initiated in June, 1956, at a time when California faced a severe shortage of secondary school teachers. During the school year 1955-1956, 9.8 percent of teachers in California (11,500 teachers) were teaching with sub-standard credentials. By providing a program which could enable prospective teachers to enter the classroom in the shortest time through intensive experiences in the summer preceding their assuming responsibilities as full-time teachers, the GIP staff hoped to attract a more mature and dedicated group of persons than that attracted to regular programs of teacher education, a group that might not otherwise enter the teaching profession. Initially financed by the Rosenberg Foundation of San Francisco, the Program from its time of inception was self-contained and was undergirded by the following principles: (1) the professional preparation of teachers should be a joint responsibility of the University and the public schools; (2) the University's responsibility for the preparation of teachers should be shared by academic departments and the Education department; (3) theory and practice should be related to each other; and (4) multiple programs of teacher education are desirable within an institution, and (5) experimental approaches to teacher education are needed.

From its beginning, the GIP was viewed as an evolving program, one that could not and should not conform to a rigorous and rigid pre-determined research

design. No attempt was made to establish a control group to serve as a foil to the program, research being viewed as a means of feedback and support, not of control, of the experiment.[1]

Recruitment:

Initially posters describing the program were placed on bulletin boards of colleges and universities in California; in city, county, and professional libraries of the Bay Area; and in a number of offices in the California Deparment of Employment. Leaflets describing the Program and listing the minimum requirements were available on request. As time passed, fewer posters were needed as word-of-mouth commendation became the primary means of informing individuals of the program's existence. Approximately 800 persons annually inquire of the Internship office for information about the GIP. Of these, 300-350 formally submit applications. To be considered for acceptance, an applicant must have completed his A.B. or B.S. degree, must have had little or no previous work in Education, and must have a 2.5 in upper division work and a 2.5 in his major. (Most applicants accepted have over a 3.0 average in their major and minor fields.) Finally, he must have a teachable major or minor for the secondary schools of California.

Screening and Selection:

Screening of applicants begins in October preceeding the summer of formal preparation, and continues to spring. The 175-200 students who are seriously considered for acceptance into the program submit 5 letters of reference (3 from persons cognizant of the applicant's academic performance). Additionally, candi-

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[1]James C. Stone and Clark N. Robinson, The Graduate Internship Program in Teacher Education--The First Six Years. Berkeley and Los Angeles: University of California Press, 1965.

dates submit two observations of teaching in a high school or a junior high school, each observation at least 1/2 day in length. On four Saturdays between October and March, groups of 40-50 candidates are invited to the University to undergo testing. The instruments used are the OPI, the Strong Vocational Interest Blank, and the Crossman Q-Sort. As the testing proceeds, six to ten candidates at a time leave the testing area to participate in a discussion of their observations of the junior and senior high schools they have visited, or of controversial topics which relate to their school observations. During these discussions, two or three staff members observe, annotate what they see and hear, and make preliminary judgments about each of the candidates. Two personal 1/2 hour interviews take place the week following the testing. The first 1/2 hour interview is conducted by one of the staff members; the second by the coordinator of the program. Candidates in these interviews are rated 1-4, 1 signifying acceptance; 4 rejection. The nine staff members than meet in "troikas" to discuss candidates whom they have interviewed. Of 18 discussed in each of these meetings, approximately 12 will be presented to the staff for acceptance. At the large staff meeting, any discrepancies in judgment between staff members and coordinator will be discussed and, if warrented, an additional interview will be arranged for a controversial candidate. In their deliberations, the staff must remain mindful of quotas for each of the teaching fields, and of preferences to be given initially to older and more experienced people (and to minority group candidates), rather than to June graduates. Those who are temporarily accepted into the Program are invited to a night meeting at the University where he is told about fees for tuition and textbooks; about the general mechanics of the program; and about how to obtain a job. The candidate meets briefly in a subject matter group in which he is given a bibliography of selections with which to become familiar before summer.

Basic Philosophical Assumptions of the GIP

1. The most promising candidates are selected.

2. There is no single "right" type of person for teaching. In screening, diversity is sought; throughout the program, it is nurtured.

3. No single element of the program is considered to be more important than the screening and selection procedures.

4. What one is, is the best measure of one's potential for growth.

5. The intern is both a learner and a teacher.

6. How the intern is taught will influence how he teaches.

7. Each intern is encouraged to develop his own functional philosophy of education and his own most effective teaching style. The Program's task is to help each intern become the type of teacher that he is best able to be.

8. Classroom teaching is the integrating factor in the process of learning to teach and in the Program's curriculum.

9. Staff members' sensitivity to the interns' changing needs provides invaluable clues as to the nature, amount, and timing of curriculum content.

10. The professional education curriculum is spiral, drawing from the disciplines of psychology, philosophy, sociology, and curriculum theory to help solve interns' "here and now" problems. The spiral curriculum enables interns to analyze and reanalyze these disciplines, "taking" the right amount at the proper time.

11. The extent to which an intern is made to feel like a teacher does much to determine his success as a teacher. Interns are encouraged to regard themselves as teachers who are learning, not as learners who are "practice" teaching.

12. The program incorporates the strengths of an interdisciplinary approach.

13. Members of the staff give their full-time attention to the internship program and meet regularly to plan, report, and evaluate.

14. The staff functions as a team with each staff member's unique strength contributing to the effectiveness of the total program.

15. A warm, close, friendly relationship between interns and staff members is established during screening and maintained throughout the program.

16. The Program is a model of the teaching-learning process so that the relations of staff members and interns will be a model for their relations with students.

17. The Graduate Internship Porgram works closely with the cooperating public schools as partners in the preparation of teachers.

18. Various follow-up procedures are used to keep in touch with "externs" and to encourage their professional growth.

19. Frequent and continuous staff assessment of intern and "extern" reactions, and staff observations of program needs are used as a basis for improving the program.

20. The Program's approach to Teacher Education is holistic rather than atomistic.

Pre-placement Meetings:

The geographical area in which interns are eventually placed is divided roughly into four regions. At four pre-placement evening meetings, administrators representing each of these regions are invited to the University to become acquainted with prospective interns interested in teaching in their area. About 20-30 administrators attend each of these meetings. After candidates have introduced themselves briefly, and after both administrators and candidates have had an opportunity to chat over a cup of coffee, administrators interview the prospective interns in whom they are interested. Out of these interviews at the University, many interns eventually are hired. Employment in a school is the final requisite for acceptance into the GIP.

Once placed, the interns meet for a week before the beginning of summer school to hear stimulating speakers, discuss the educational implications of what they have heard, be divided according to the training centers in which they will teach during the summer, and meet in subject-matter groups.

Pre-internship Summer Session:

The 90 interns finally accepted into the Program are distributed at 3 training centers (8 weeks) during the summer-Oakland Technical High School, Berkeley High School, and Harry Ells High School (Richmond), the latter having 15 interns selected for a special program funded by the Ford Foundation, the "School Project for Academic Non-achievers" (SPAN). During the 6-7 weeks of summer school, the intern briefly observes a master teacher before assuming fully responsibility for a class, meets in a small inter-disciplinary seminar group in the morning, and joins other interns in the afternoon for a large group seminar. Curriculum in the seminars is regarded as "spiral," content and concepts being drawn, as

they seem relevant to the interns' classroom teaching, from educational psychology, history and philosophy of education, and curriculum and instruction. From initial naivete about Education the intern progresses to greater and greater sophistication as he repeatedly returns to these same concepts and content and probes them in ever greater depth. Once a week, in place of the large group seminar, the interns meet in subject-matter groups to discuss methodology in their respective disciplines.

Internship Teaching:

The intern teaches full-time on full salary from September to June under the supervision of school district personnel and the Program staff. Members of the latter visit the intern once every two weeks during the fall, always on demand, and less frequently in the spring is the intern has shown evidence, as most do, of progressive assurance and ability in the classroom. During the school year, the intern attends 18 Saturday seminars and a weekend conference at Asilomar in March. Meetings on Saturday begin at 9:00 a.m. with the presentation of a topic of general educational interest, followed by small group seminars or subject matter meetings, depending on the type of presentation. Of the 18 meetings, at least 4 are devoted to pedagogy in the intern's teaching field.

Post-Internship Summer Session:

If the intern has entered the GIP without academic course work beyond the A.B. degree, he is required to take 6 semester units in either his major or minor field before he receives a regular credential. This work, if necessary, is completed in the summer following internship teaching. Since 1/4 to 1/3 of the interns have earned an M.A. before entering the program, many are excused from this requirement. The staff approves the intern's summer program and many are encouraged to take this summer's work at other colleges and universities. With the exception of this second summer's course work, all instruction and supervision is offered by the GIP staff during the first 12 months of the program.

Summary

It is obvious from the descriptions of the four programs that the regular elementary and secondary programs are quite similar, as are the elementary and secondary internship programs. In both instances, the secondary programs were the forerunners of the elementary ones, with the elementary curriculums taking their tone and characteristics from the already longer established regular secondary program and the GIP. In both instances the intern programs are more intensive--full-time teaching with salary vs. partial student teaching without remuneration and under the immediate supervision of a master teacher, and more extensive--twelve months vs. nine months--thus tending to attract as candidates energetic persons with a strong and immediate commitment to teaching.

Both internship programs are based on different theoretical concepts of curriculum organization than that of the regular programs. Essentially the internship programs are fifth-year professional curriculums placed on top of a four year liberal arts program. The regular programs are five-year curriculums in which liberal arts and professional courses are co-mingled from the junior year on through and including the fifth year. These theoretical distinctions of curricular organization Borrowman terms "the purist position versus the eclectic or ad hoc approach."[2]

For purposes of this investigation it is important to point out that the selection processes are quite similar in all four programs UP TO A POINT. Then the intern programs become more rigorous because of the added selection by school districts. In any event, the candidates in the four curricula are, at least, all at the fifth year level of collegiate preparation.

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[2]Merle L Borrowman. Teacher Education in America: A Documentary History, New York: Columbia University Teachers College Press, 1965, pp. 27-53.

Chapter 3 Demographic Characteristics of the Subjects

The purpose of this chapter is to present demographic comparisons among the subjects in the four teacher education programs in operation at U. C., Berkeley in 1969-70. For the GIP group, a previous study presented comparable data over a six year period, 1956-61.[1] Comparisons of the 1969-70 GIP sample with the earlier groups are available in the Appendix, as are samples of "representativeness" of the present four groups. In this chapter, most of the demographic characteristics are analyzed by proportion, using samples of fifteen selected from the two regular programs and samples of thirty from each of the internship curricula.

Racial Background:

The great predominance of the trainees in all of the programs are of the Caucasian race. However, both the elementary and secondary internship programs were able to attract larger numbers of minority students. This was especially true in the case of the elementary internship program in which 20 percent of the students were Black. Since special efforts to recruit and select prospective teachers from multicultural populations was one of the unique features of the two internship curricula, the data show that they were achieving the goal in a significant way.

Table I Racial Origin of Regular and Intern Students

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
White	13	87	15	100	22	73	24	80
Black	0	0	0	0	6	20	2	7
Brown	0	0	0	0	0	0	2	7
Yellow	2	13	0	0	2	7	1	3
No Ans.	0	0	0	0	0	0	1	3
Total	15	100	15	100	30	100	30	100

[1] James C. Stone and Clark N. Robinson, The Graduate Internship Program in Teacher Education--The First Six Years (Berkeley and Los Angeles: The University of California Press, 1965).

Age:

Age at the time of entry into the programs is a demographic characteristic which is not analyzed as a proportion because of its continuous nature. It was expected that the interns would be significantly older than students in the regular programs. To test this a student's t-test was performed.

Table II Test for Mean Ages

Elementary Level

	Regular	Intern	Difference	t
$\bar{X}$	23.67	24.07	.40	.23
S.D.	7.16	4.68		
N	15.00	30.00		

$[t_{14}(.95)=1.761]$*

Secondary Level

	Regular	Intern	Difference	t
$\bar{X}$	23.53	27.27	3.74	1.90
S.D.	4.09	6.97		
N	15.00	30.00		

$[t_{14}(.95)=1.761]$*

*Since the variances are unequal, the minimum of the degrees of freedom of the two groups is used.

As the data indicates, there are no age differences between students in the two programs at the elementary level, nor between them and the students in the regular secondary curriculum. However, it is clear that the intern secondary program attracts a group of older students.

Sex:

Both intern programs had a far greater proportion of males than did the two regular programs. This was particularly true of the GIP which attracted 40% males, while both regular curricula were female dominated.

Table III Sex of Student and Intern Teachers

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Male	0	00	1	07	8	27	12	40
Female	15	1 00	14	93	22	73	18	60
Total	15	1 00	15	1 00	30	1 00	30	1 00

Marital Status:

Both intern programs had a far greater proportion of married trainees than did the regular curricula which were largely dominated by single women.

Table IV Marital Status of Student and Intern Teachers

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Married	4	27	2	13	18	60	16	53
Single	11	73	11	73	11	37	14	47
Divorced	0	00	2	13	1	03	0	00
Total	15	1 00	15	1 00	30	1 00	30	1 00

Number of Children:

Both intern group's students have a higher proportion of children, as shown in Table V.

Table V Number in Programs Who Had Children

Number of Children	Reg. Elem. #	Reg. Elem. %	Reg. Sec. #	Reg. Sec. %	Int. Elem. #	Int. Elem. %	Int. Sec. #	Int. Sec. %
0	13	87	13	87	22	73	21	70
1	0	00	1	07	6	20	2	07
2	1	07	1	07	1	03	3	10
3	1	07	0	00	0	00	0	00
4	0	00	0	00	1	03	3	10
5	0	00	0	00	0	00	1	03
	15	1 00	15	1 00	30	1 00	30	1 00

Birthplace:

As shown in Table VI, the students in all four programs are predominately "westerners," with only the regular secondary and the elementary intern programs having a sizable proportion of their groups born elsewhere (east for regular secondary trainees and Midwest and east for elementary interns).

Table VI Birthplace of Trainees

	Reg. Elem. #	Reg. Elem. %	Reg. Sec. #	Reg. Sec. %	Int. Elem. #	Int. Elem. %	Int. Sec. #	Int. Sec. %
Bay Area	7	47	2	13	11	37	9	30
West Coast	4	27	7	47	4	13	11	37
West	1	07	0	00	1	03	4	13
Midwest	1	07	1	07	6	20	1	03
South	0	00	0	00	3	10	2	07
East	1	07	4	27	5	17	1	03
Foreign	1	07	1	07	0	00	2	07
Total	15	1 00	15	1 00	30	1 00	30	1 00

Father's Occupation:

There are no definite patterns differentiating between father's occupation (our chief criterion for socioeconomic status) for trainees in the various curricula. The majority of the student's parents are "white collar" workers, as shown in Table VII.

Table VII Father's Occupation of Regular and Intern Students

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Management	5	33	10	67	15	50	11	37
Clerk	2	13	3	20	6	20	5	17
Service	0	0	1	7	2	7	1	3
Farm	5	13	0	0	0	0	0	0
Machine	1	7	0	0	0	0	4	13
Structure	0	0	1	7	0	0	1	3
No Ans.	5	33	0	0	7	23	8	27
Total	18	100	15	100	30	100	30	100

Mother's Occupation:

On the average, approximately half of the students' mothers for all groups were housewives. Of those who worked, the predominance were in management or clerical positions. A combined review of the occupations of the students' parents indicates that most of the students in all of the programs came from "middle-class" families.

Table VIII Mother's Occupation of Regular and Intern Students

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Housewife	10	67	6	40	14	47	12	40
Management	0	0	1	7	6	20	7	23
Clerk	2	13	6	40	4	13	7	23
Service	1	7	1	7	1	3	0	0
No Ans.	2	13	1	7	5	17	4	13
Total	15	100	15	100	30	100	30	100

Father's Education:

The father's educational level does not vary greatly between the various groups. Thirteen percent of the regular elementary students', 0 percent of the regular secondary students', 13 percent of the intern elementary students', and 7 percent of the intern secondary students' fathers had educational levels equal to or surpassing those of the trainees. The remainder of the students would have surpassed the educational level of their fathers upon completion of the 5th year teacher education programs.

Table IX Highest Educational Level of Fathers of Regular and Intern Students

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
H.S. -	2	13	2	13	7	23	6	20
H.S.	4	27	2	13	5	17	6	20
H.S. + 2	1	7	1	7	1	3	5	17
H.S. + 4	1	7	3	20	2	7	2	7
B.A.	2	13	4	27	5	17	4	13
B.A. +	3	20	3	20	6	20	5	17
No Ans.	2	13	0	0	4	13	2	7
Total	15	100	15	100	30	100	30	100

Mother's Education:

The educational level of the mothers of the students were slightly lower than that of the fathers. On the average, the mothers of students in both intern programs had an educational level higher than those of trainees in the two regular programs.

Table X Highest Educational Level of Mothers of Regular and Intern Students

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
H.S. -	2	13	0	0	5	17	6	20
H.S.	4	26	5	33	9	30	5	17
H.S. +2	3	20	7	47	4	13	7	23
H.S. +4	0	0	1	7	0	0	2	7
B.A.	2	13	1	7	4	13	5	17
B.A. +	2	13	1	7	4	13	3	10
No Ans.	2	13	0	0	4	13	2	7
Total	15	100	15	100	30	100	30	100

Means By Which Students Found Out About Their Program:

Counselors and friends were the most common means by which the students found out about all four of the programs. It does seem however, that the two internship programs were somewhat more successful in their publicity efforts since some of their students were recruited by this means; whereas, none of the regular program students credited publicity as the means by which they became aware of the program.

Table XI The Means By Which the Regular and Intern Students Found Out About Their Program

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Counselor	3	20	4	27	4	13	0	0
Program Staff	0	0	0	0	2	7	0	0
Publicity	0	0	0	0	5	17	7	23
Friend out	7	46	3	20	7	23	10	34
Friend in	1	7	1	7	3	10	3	10
Mails	0	0	0	0	0	0	0	0
Placement Officer	0	0	1	7	2	7	4	13
Dean	0	0	0	0	1	3	0	0
Public School	0	0	0	0	1	3	3	10
No Ans.	4	27	6	39	5	17	3	10
Total	15	100	15	100	30	100	30	100

Professional Goals:

The majority of all of the prospective teachers in the four curricula perceived classroom teaching as their ultimate professional goal. Counseling, teaching in a college or university, and research were careers within the profession that were next most attractive to all students. The two intern groups were slightly more numerous in their career interests in other than classroom teaching than were those in the student teaching curricula.

Table XII The Professional Goals of the Students in the Four Curriculums

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Class Tchr.	14	93	11	73	16	53	23	77
Counselor	0	0	7	1	3	10	1	3
Administrator	0	0	0	0	3	10	1	3
Higher Edu. Tchr.	0	0	7	1	0	0	1	3
Researchr.	0	0	2	13	3	10	0	0
Spec. Ed. Tchr.	0	0	0	0	1	3	0	0
Spec. Tchr.	1	7	0	0	1	3	0	0
Librarian	0	0	0	0	0	0	1	3
No Ans.	0	0	0	0	3	10	3	10
Total	100	15	100	15	30	99	30	99

Highest Degree:

In terms of highest degree held at the time of admission to one of the four teacher preparation curricula, as shown in Table XIII, the two elementary programs had most of the trainees who held bachelor's degrees, while the two secondary ones had a 27 percent proportion who held master's degrees.

Table XIII Highest Degree Held at Time of Entry Into Program

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Bachelor's	15	1 00	11	73	27	90	22	73
Master's	0	00	4	27	2	07	8	27
Doctor's	0	00	0	00	1	03	0	00
Total	15	1 00	15	1 00	30	1 00	30	1 00

Degree Granting Institution:

The bulk of the trainees in all programs were A.B. graduates from the University of California at Berkeley, as shown in Table XIV. However, both intern programs had a higher proportion--1/3 to 1/2--of their trainees holding degrees from other than a campus of the University of California.

Table XIV Types of Institutions Granting Entry Degree

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Unif. of Calif. Berk.	11	73	10	67	13	43	17	57
		> 86		> 74		> 50		> 64
Other U.C. Campuses	2	13	1	07	2	07	2	07
Calif. State Colleges	0	00	0	00	5	17	3	10
Calif. Private Coll.	1	07	3	20	4	13	3	10
Public College or Univ. outside Calif.	1	07	1	07	3	10	2	07
Private College or Univ. outside Calif.	0	00	0	00	3	10	3	10
Total	15	1 00	15	1 00	30	1 00	30	1 00

Extent of Travel:

All groups had been heavily involved in foreign travel prior to admission. By contrast, little travel was done in the U.S., as shown in Table XV.

Table XV Extent of Travel Prior to Entry

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
West Coast only	0	00	1	07	2	07	4	13
U.S. - large amt.	3	20	0	00	6	20	0	00
U.S. - small amt.	1	07	4	26	3	10	1	03
U.S., Can, Mx	5	33	2	13	5	17	5	17
Foreign only	5	33	2	13	4	13	12	40
Foreign & U.S.	1	07	6	40	10	33	5	17
Total	15	100	15	100	30	100	30	100

Teaching Fields:

The social sciences were the predominant majors for all subjects except those in the GIP, which is the only program which attracted a sizable proportion of math-science majors, as shown in Table XVI. This is as expected, since a part of the GIP is the "Math for Teaching" special major offered in the Mathematics Department at U.C.B.*

Table XVI Teaching Fields at time of Entry Into Program

	Reg. Elem.		Reg. Sec.		Int. Elem.		Int. Sec.	
	#	%	#	%	#	%	#	%
Humanities	4	.27	5	.33	4	.13	4	.13
Social Science	7	.47	8	.54	16	.53	4	.13
Math & Science	2	.13	0	.00	2	.07	10	.33
Fine Arts	1	.07	2	.13	2	.07	4	.13
Foreign Lang.	1	.07	0	.00	2	.07	2	.07
Home Ec.	0	.00	0	.00	0	.00	1	.03
Other	0	.00	0	.00	4	.13	5	.17
Total	15	1.00	15	1.00	30	1.00	30	1.00

Intellectual Achievement:

A further demographic characteristic which is used for comparison purposes is intellectual achievement. For this, two measures were employed: (1) the trainee's score on the Terman Concept Mastery Test and (2) his overall grade point average at the time of admission to the program. Since these two measures are moderately correlated, the appropriate procedure used was a multivariate analysis of variance. This technique tests whether the groups are equal on both measures simultaneously, thus answering the question for intellectual achievement in a more efficient manner and with less chance of error than would be the case with repeated univariate tests. Univariate tests are also included for convenience. The "P less than" in the tables gives the levels at which the

*Beginning in 1959, the Mathematics Department, under the leadership of Professor John Kelly, initiated a new mathematics major designed for students interested in secondary school teaching. The budget for the GIP was increased the following year in order to accommodate 15-20 graduates of the special math major.

corresponding F values would be significant. That is, the multivariate test for the equality of means at the elementary level would be considered significant if we happened to be testing at the .4758 level. Since these probabilities are more useful than F values, they are presented to four decimal places, whereas the F values have been rounded to two places.

The Terman Concept Mastery Test is a high level verbal test for adults. It is untimed, but usually takes about 40 minutes to complete. The test contains two types of items: (1) synonym-antonym and (2) analogy type. The correlation between the two parts is .76. The test discriminates effectively between adults of different educational levels, and has a reasonable validity for predicting college or university success. The publishers of the test claim that Form T is suitable for testing college juniors and seniors, graduate students, and adults who are being considered for research, executive. and other demanding jobs.

For the purposes of this study the scores of each of the four groups on the Concept Mastery Test are related to grade point average (GPA), as shown in Tables XVII and XVIII .

As the data in the two tables indicates, there is no stastically significant difference in the intellectual achievement of the students in the four programs. Overall, each of the programs is attracting students with a high level of intellectual achievement. There is an intriguing difference in the correlations between the Terman Concept Mastery Score and grade point average when the interns are compared with the regular program students. For the regular program students, the correlation is moderately high, whereas for the interns, it is negligible. Perhaps students in the regular curricula were more conscientious students in their undergraduate days than were interns who

Table XVII Elementary Level Terman Concept Mastery Scores and Grade Point Averages

Variable	Regular Mean (N = 15)	Intern Mean (N = 30)	Univariate F	P less than
Terman	94.13	101.47	.59	.4485
GPA	3.02	2.95	.48	.4943

$[F_{1,43}(.975) = 5.3980]$

F - Ratio for Multivariate Test
.7561 P less than .4758

$[F_{2,42}(.95) = 3.2216]$

Variable	Regular S.D.	Intern S.D.	Pooled S.D.
Terman	33.92	28.41	30.32
GPA	.37	.31	.33

Correlation Between Terman and GPA

	Regular	Intern
r	.668	.076
N	15	30
$r_{.01}$	.592	.423

Table XVIII Secondary Level Terman Concept Mastery Scores and Grade Point Averages

Variable	Regular Mean (N = 15)	Intern Mean (N = 30)	Univariate F	P less than
Terman	101.33	104.93	.16	.6958
GPA	3.23	3.08	1.48	.2308

$[F_{1,43}(.975 = 5.3980)$

F - Ratio for Multivariate Test
1.2051 P less than .3099

$[F_{2,42}(.95) = 3.2216)$

Variable	Regular S.D.	Intern S.D.	Pooled S.D.
Terman	25.50	30.43	28.91
GPA	.37	.41	.40

Correlation Between Terman and GPA

	Regular	Intern
r	.601	.354
N	15	30
$r_{.01}$	.592	.423

were more likely to have been "far out" types. As a result, the intellectual abilities of the regulars, as measured by the Concept Mastery Test, are more directly reflected in their performance, as measured by their grade point average.

The Strong Vocational Interest Blank:

The latest manual for the Strong Vocational Blank indicates that it is a test that is valuable for predicting membership in given occupations over a long period of time, and of moderate value for predicting success within a few selected occupations. The test does not purport to measure interests as such, but to differentiate successful men engaged in different occupations and thus aid young persons to find the occupation best suited to them. The items elicit attitudes about a great variety of stimuli not primarily vocational in content. Many of the items could be used in a "personality" inventory, and for this reason there is a high retest stability as the individual reaches maturity. The basic merit of the Strong test is that it gives scores on specific occupational scales through a comprehensive inventory. In this study, the scoring of the tests was done by computer.

The Strong Vocational Interest Blank (SVIB) was used to measure interest in teaching versus interest in other occupations. Among the teacher education staff of the four programs, there was a widely held assumption that those in the intern programs had a stronger and deeper interest in teaching than those in the regular programs; whose interest often was described as "casual," "superficial," "will teach only if she doesn't get her Mrs. degree" etc. Scores on the SVIB were analyzed by the CALIF program for multivariate analysis using all 55 items on the Blank. The analysis demonstrates clearly that interest in teaching is not a dimension which distinguishes one group from another, (Figure 1).

Figure 1. Mean Scores on the Strong Vocational Interest Blank of Students in the Four Programs

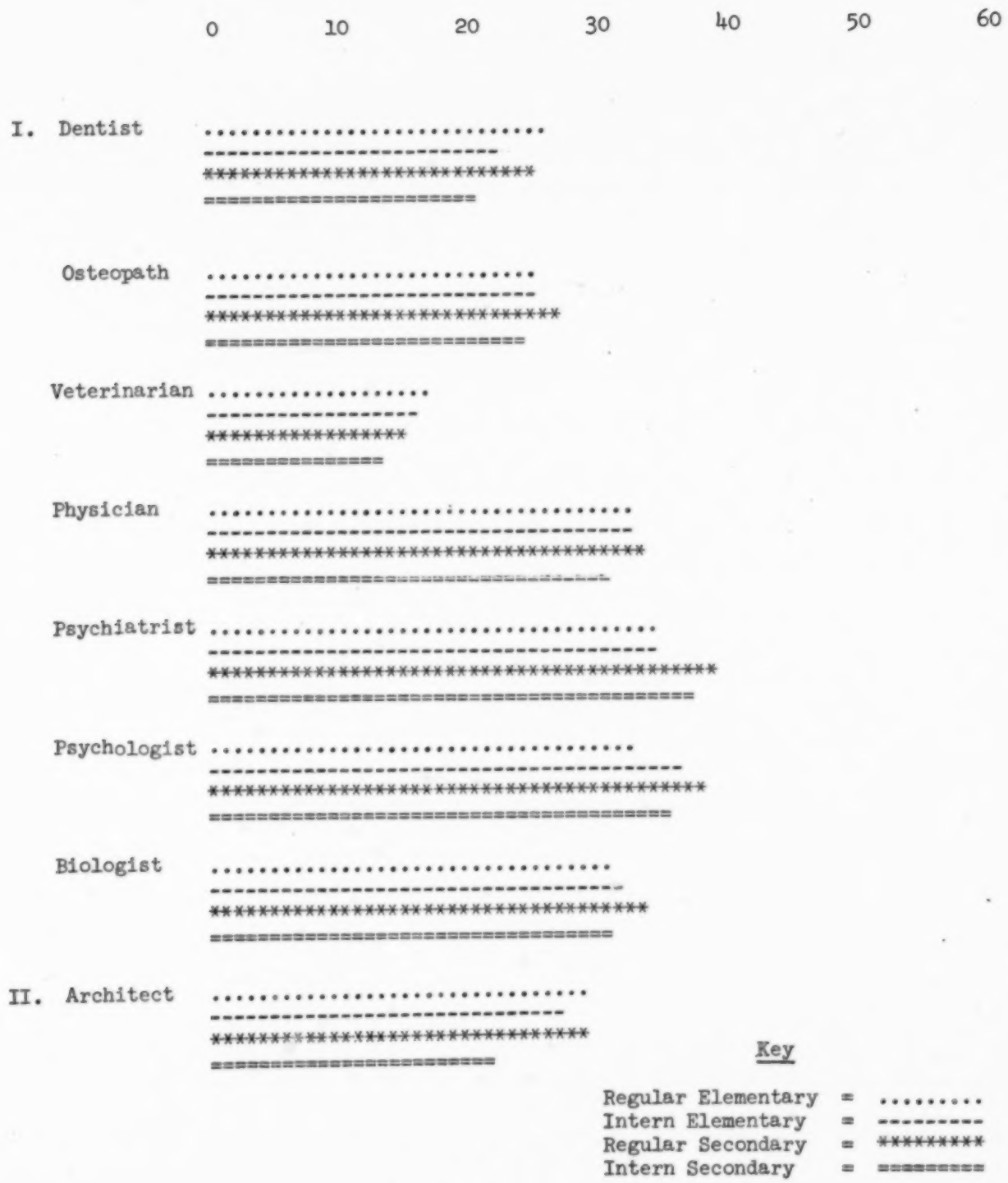


Figure 1. (continued)

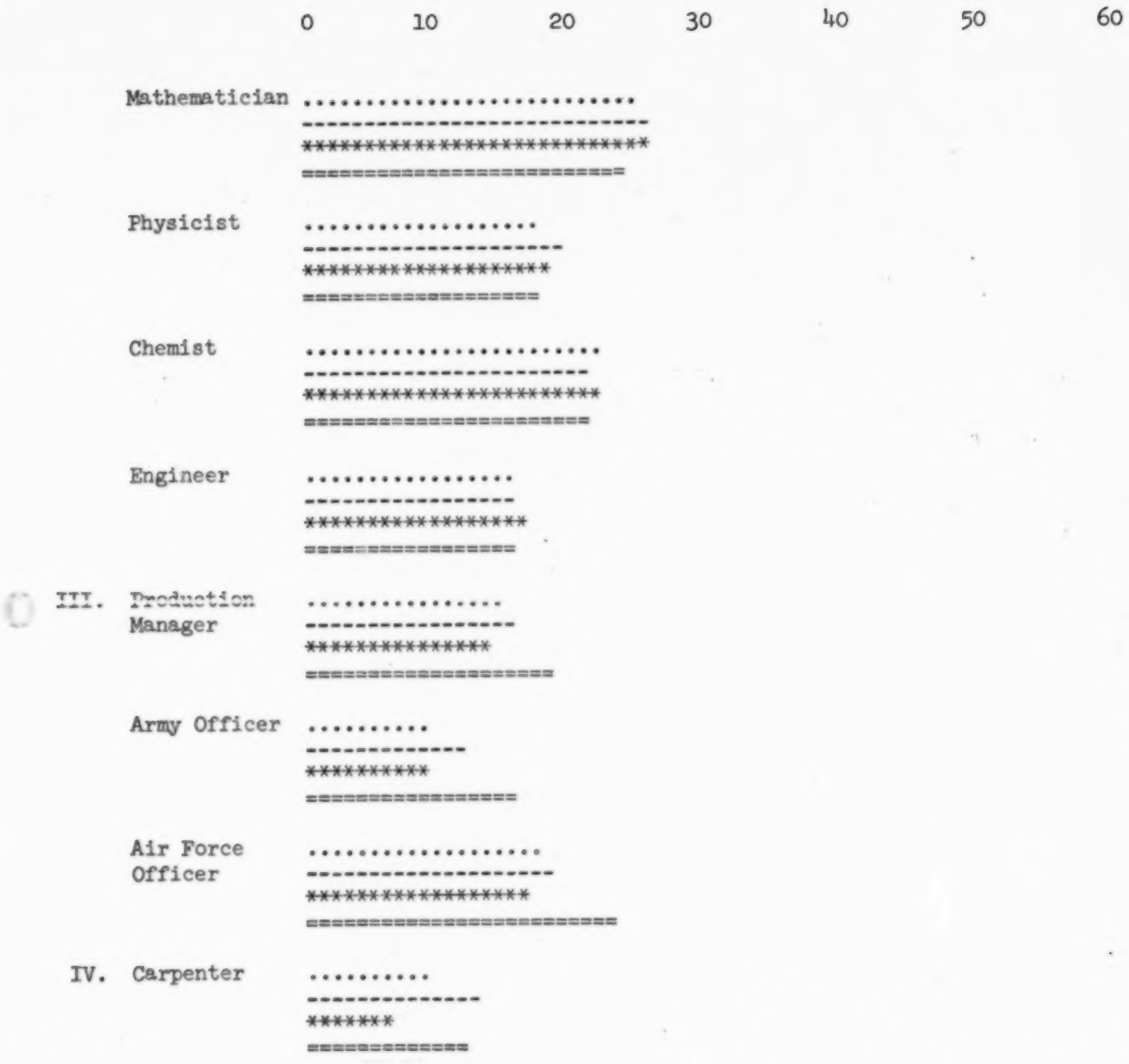


Figure 1. (continued)

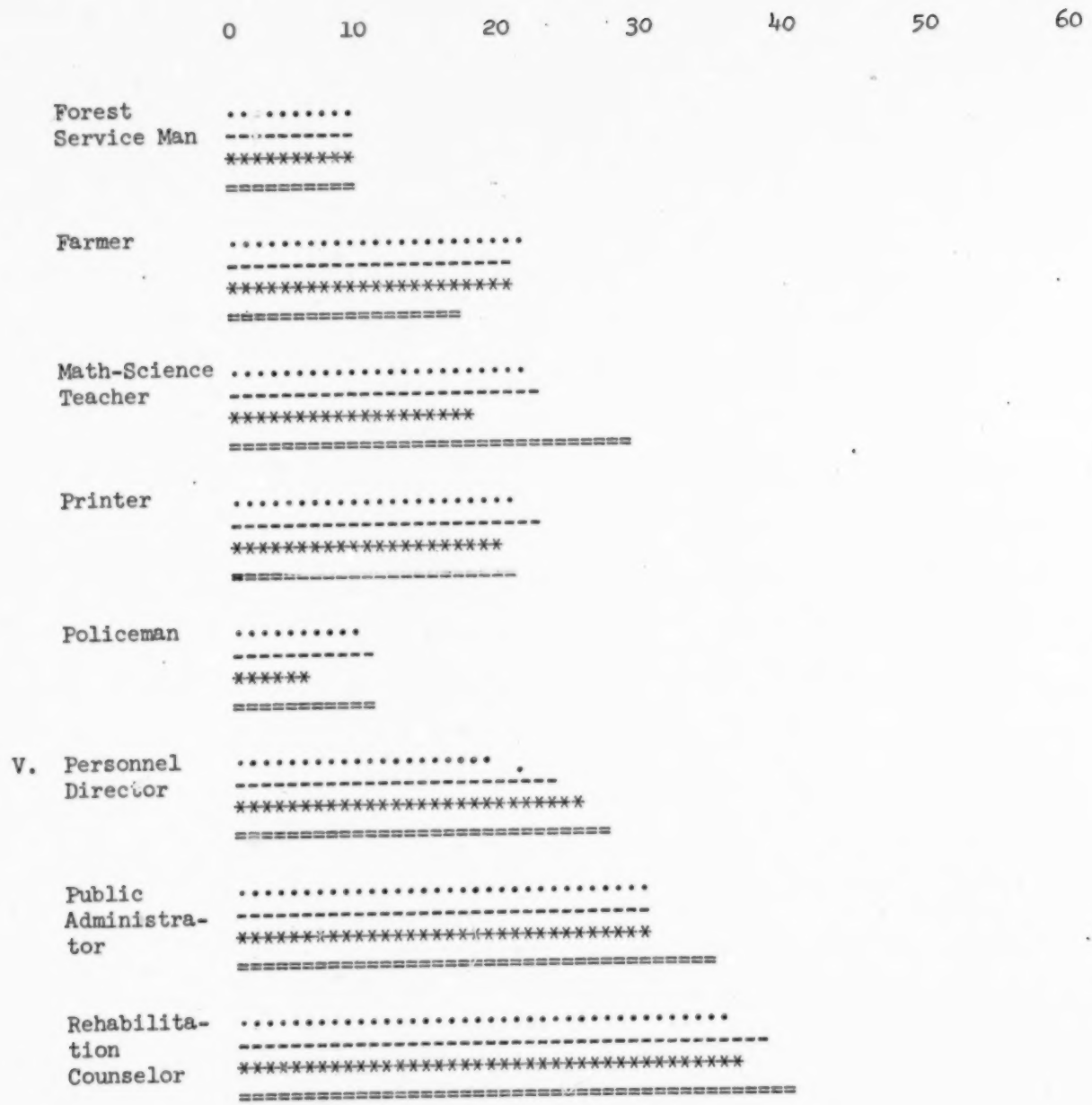
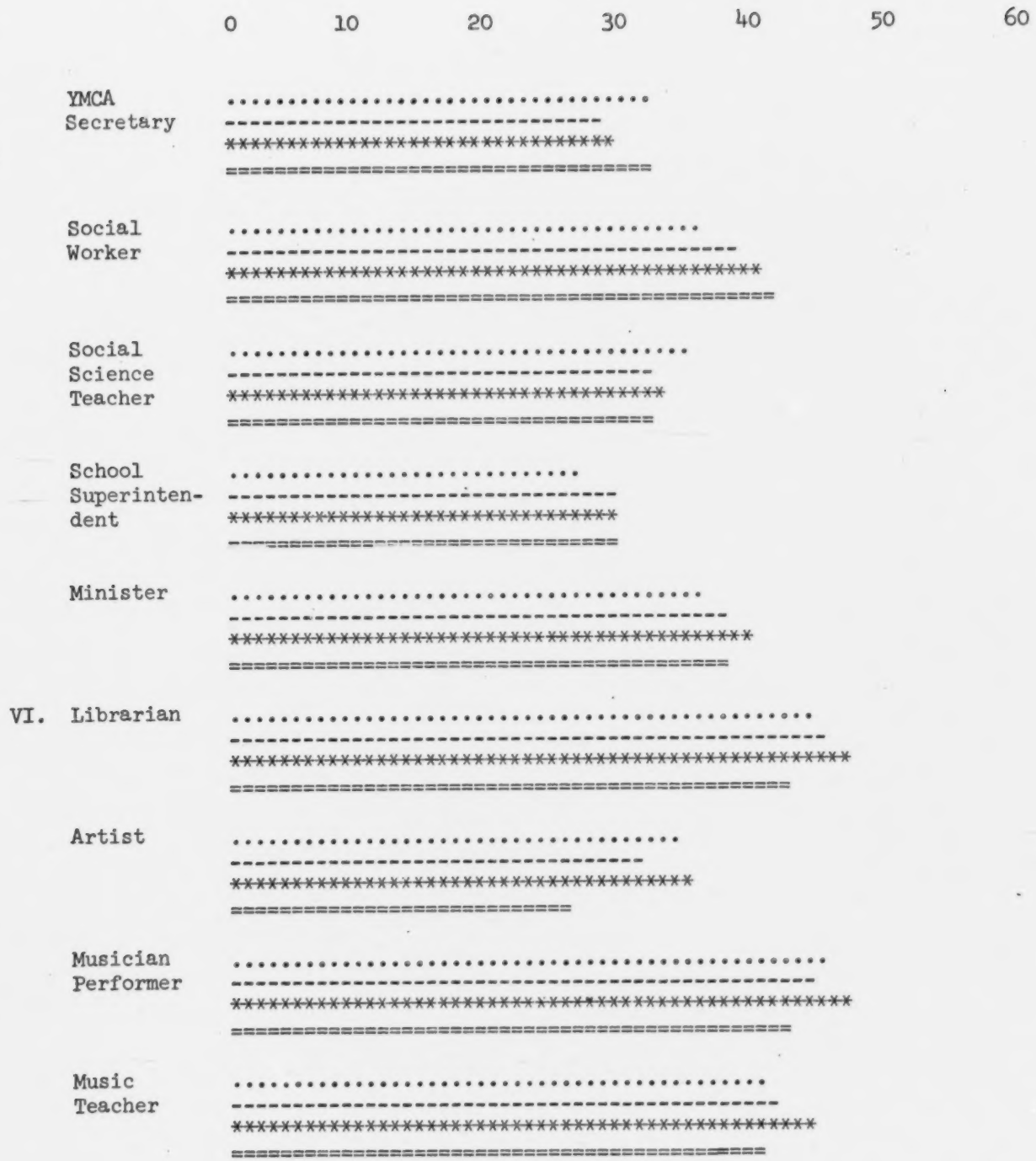


Figure 1. (continued)



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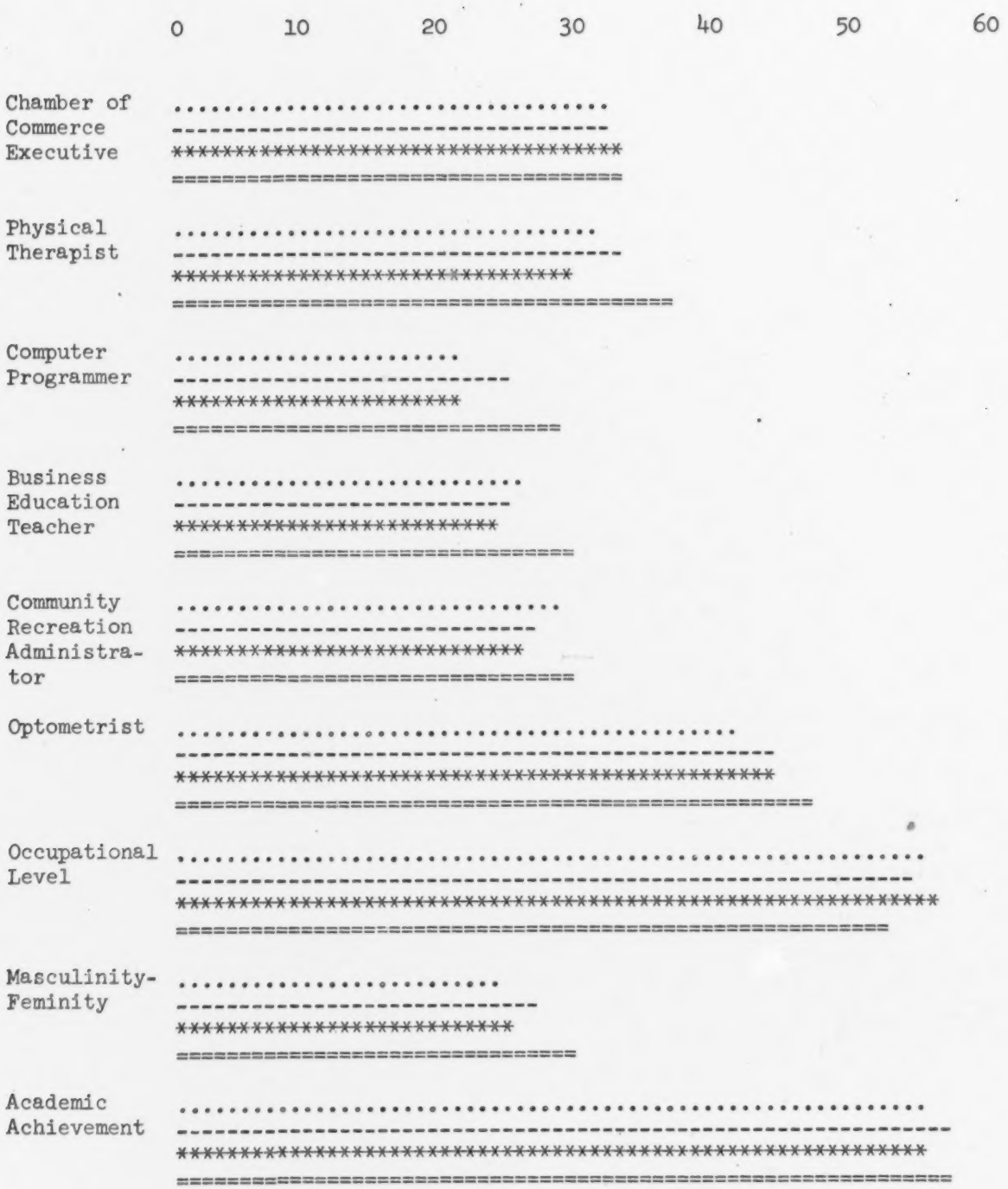


Summary:

Demographic data and scores of the Terman Concept Mastery Test and the Strong Vocational Interest Blank were analyzed to determine whether each of the four programs in fact attracted students differentially, i.e., do the programs complement each other?

All four groups were quite similar in such background characteristics as (1) place of birth of trainees (West), (2) "white collar" working fathers, (3) middle class origins, (4) fathers with educational levels approximately equal to that of the trainees, (5) mothers with educational levels slightly lower than that of the trainees, (6) bachelor's or master's degrees completed at time of admission to the program, (7) institutional source of degrees, (8) extensive foreign travel prior to admission, (9) high academic achievement as measured by the Terman Concept Mastery Test and undergraduate and/or graduate grade point average, and (10) high interest in teaching as measured by the Strong Vocational Interest Blank.

The internship elementary program and the internship secondary program were quite different from the two regular programs in the following characteristics: (1) they attracted and enrolled a much higher proportion of men, (2) recruited more Blacks, (3) had more married persons, (4) had older, more mature persons, (5) the trainees had a higher proportion of children of their own, (6) they had long-term career goals that were more clearly defined, (7) they held bachelor's degrees from other than campuses of the University of California, and (8) more of them were math-science majors.

Thus, in a number of significant ways, the two intern programs were, in fact, complementary to the two regular curricula, attracting prospective teachers who possessed different backgrounds.

Chapter 4 Personality Characteristics

In addition to comparing students in the four teacher education curricula on the basis of demographic data, it was deemed important to consider dimensions of their personalities. For one thing, the two internship programs were initiated in the belief that each would recruit and attract a different type of person as a teacher candidate than were being recruited and attracted to the long-existing regular programs. It was time to put this assumption to the test. For this purpose the Omnibus Personality Inventory (OPI) was administered to all subjects at the beginning of their program.

A major hypothesis of the investigation was that "trainees in the two internship programs will differ significantly from those in the two student teaching progrmas in the amount and direction of change resulting from the impact of their curricular experience as measured by the OPI. . . ." Administering the OPI at the end of the one-year graduate program and comparing the results with the pretest scores, was viewed as an important source of data for accepting or rejecting this hypothesis.

The Omnibus Personality Inventory

The Omnibus Personality Inventory (OPI) is a pencil and paper test of 385 true/false items which yield scores on fourteen scales. The purpose of the OPI is to assess selected attitudes, values and interests that are relevant in the areas of normal ego functioning and intellectual activity. It has been used extensively with college students to assess selected personality characteristics and to predict academic achievement. The score that an individual obtains on a particular scale of the OPI is indicative of certain predispositions in his personality. The descriptions of the scales listed below served as the basis for the descriptive and comparative analysis.

Definitions of the Fourteen (14) Scales

1. Thinking Introversion (TI)

There are forty-three (43) items in this scale. Persons scoring high on this measure are characterized by a liking for reflective thought and academic activities. They express an interest in a broad range of ideas such as literature, art, and philosophy. Their thinking is less dominated by immediate conditions and situations, or by commonly accepted ideas than that of thinking extroverts (low scorers). Most extroverts show a preference for overt action and tend to evaluate ideas on the basis of their practical, immediate application, or to entirely reject or avoid dealing with ideas and abstractions.

2. Theoretical Orientation (TO)

There are thirty-three (33) items in this scale. This scale measures an interest in, or orientation toward, a more restricted range of ideas than is true of the TI scale. High scorers indicate a preference for dealing with theoretical concerns and problems and for using the scientific method in thinking; many also exhibit an interest in science and scientific activities. High scorers are generally logical, analytical and critical in their approach to problems and situations. The low scorer tends to steer away from the complex or unstructured.

3. Estheticism (Es)

There are twenty-four (24) items in this scale. High scorers endorse statements indicating diverse interests in artistic matters and activities and a high level of sensitivity and response to esthetic stimulation. The content of the items in this scale extend beyond painting, sculpture, and music, and includes interests in literature and dramatics.

4. Complexity (Co)

There are thirty-two (32) items in this scale. This measure reflects an experimental and flexible orientation rather than a fixed way of viewing and organizing phenomena. High scorers are tolerant of ambiguities and uncertainties; they are fond of novel situations and ideas. Most persons who score high on this dimension prefer to deal with complexity, as opposed to simplicity. The very high scorer will seek out and enjoy the diverse and ambiguous situation. The low scorer prefers to operate in the structured and controlled situation.

5. Autonomy (Au)

There are forty-three (43) items in this scale. The characteristic measured by this scale is composed of liberal, non-authoritarian thinking and a need for independence. High scorers show a tendency to be independent of authority as traditionally imposed through social institutions. They oppose infringements on the rights of individuals and are tolerant of viewpoints other than

their own; they tend to be realistic, intellectually and politically liberal, and much less judgmental than low scorers. The low scorer is typically the supporter of the traditional status quo.

6. Religious Orientation (RO)

There are twenty-six (26) items in this scale. High scorers are skeptical of conventional religious beliefs and practices and tend to reject most of them, especially those that are fundamentalistic or orthodox. Persons scoring around the mean are manifesting a moderate view of religious beliefs and practices; low scorers are manifesting a strong commitment to Judaic-Christian beliefs and tend to be conservative in general and frequently reject other viewpoints.

7. Social Extroversion (SE)

There are forty (40) items in this scale. This measure reflects a preferred style of relating to people in a social context. High scorers display a strong interest in being with people, and they seek social activities and gain satisfaction from them. The social introvert (low scorer) tends to withdraw from social contacts and responsibilities. The low scorer does not like to take the lead in social situations and prefers to work alone.

8. Impulse Expression (IE)

There are fifty-nine (59) items in this scale. This scale assesses a general readiness to express impulses and to seek gratification either in conscious thought or in overt action. High scorers have an active imagination, value sensual reactions and feelings; very high scorers have frequent feelings of rebellion and agression. The low scorer tends to be a "rule follower".

9. Personal Integration (PI)

There are fifty-five (55) items in this scale. The high scorer admits to few attitudes and behaviors that characterize socially alienated or emotionally disturbed persons. Low scorers often intentionally avoid others and experience feelings of hostility and agression along with feelings of isolation, loneliness, and rejection.

10. Anxiety Level (AL)

There are twenty (20) items in this scale. High scorers deny that they have feelings or symptoms of anxiety, and do not admit to being nervous or worried. Low scorers describe themselves as being tense and high-strung.

They may experience some difficulty in adjusting to their social environment, and tend to have a poor opinion of themselves. The low scorer may feel that things are piling up and are very sensitive. (Note: the high scorer indicates less anxiety.)

11. Altruism (Am)

There are thirty-six (36) items in this scale. The high scorer is an affiliative person, who is trusting and ethical in his relations with others. He has a strong concern for the feelings and welfare of people he meets. Low scorers tend not to consider the feelings and welfare of others and often view people from an impersonal, distant perspective. The low scorer will not enjoy being with children or groups and tends to be spiteful.

12. Practical Outlook (PO)

There are thirty (30) items in this scale. The high scorer on this scale is interested in practical, applied activities and tends to value material possessions and concrete accomplishments. The criterion most often used to evaluate ideas and things is one of immediate utility. Authoritarianism, conservatism, and non-intellectual interests are very frequent personality components of persons scoring above average. The low scorer will tend to be rather more open-minded.

13. Masculinity-Feminity (M-F)

There are fifty-six (56) items in this scale. This scale assesses some of the differences in attitudes and interests between college men and women. High scorers (masculine) deny interests in esthetic matters, and they admit to few adjustment problems, feelings of anxiety, or personal inadequacies. They also tend to be somewhat less socially inclined than low scorers and more interested in scientific matters. Low scorers (feminine), besides having stronger esthetic and social inclinations, also admit to greater sensitivity and emotionality. The low scorer is more interested in the arts than is the high scorer.

14. Response Bias (RB)

There are twenty-eight (28) items in this scale. This measure composed chiefly of items seemingly unrelated to the concept, represents an approach to assessing the test-taking attitude. High scorers are responding in a manner similar to a group who were asked to made a good impression by their responses to these items. Low scorers on the contrary may be trying to make a bad impression or are indicating a low state of well being or feeling of depression. The high scorer usually enjoys solving problems, and people are meaningful to him.

OPI Pretests:

The tests of equality for the OPI pretest profiles of elementary school teacher trainees are presented in Table XIX and graphically in Figure 2. As can be seen from the table, there are no significant differences between students in the two elementary programs--regular and intern. The F-ratio for the multivariate test of equality of means is 1.0053, which falls short of $F_{14,30}(.90) = 1.7367$, the value necessary for significance at the .10 level. The univariate tests also indicate no significant differences at the .01 level for each of the fourteen scales of the OPI.

Table XIX

Elementary OPI Pre-Test Scores

Scale	Regular Mean	Intern Mean	Univariate F	P less than
1	27.27	29.03	.88	.3546
2	19.53	20.57	.40	.5296
3	14.13	15.37	1.06	.3081
4	14.93	16.30	.67	.4126
5	33.07	34.80	1.05	.3115
6	17.60	16.53	.37	.5464
7	24.73	21.93	2.67	.1094
8	27.87	27.23	.04	.8372
9	37.13	40.23	1.72	.1962
10	14.47	15.13	.41	.5268
11	24.87	24.57	.05	.8164
12	10.47	9.53	.47	.4946
13	23.67	26.13	2.66	.1105
14	15.27	14.67	.23	.6341

[$F_{1,43}(.99) = 7.2679$]

F-Ratio for Multivariate Test

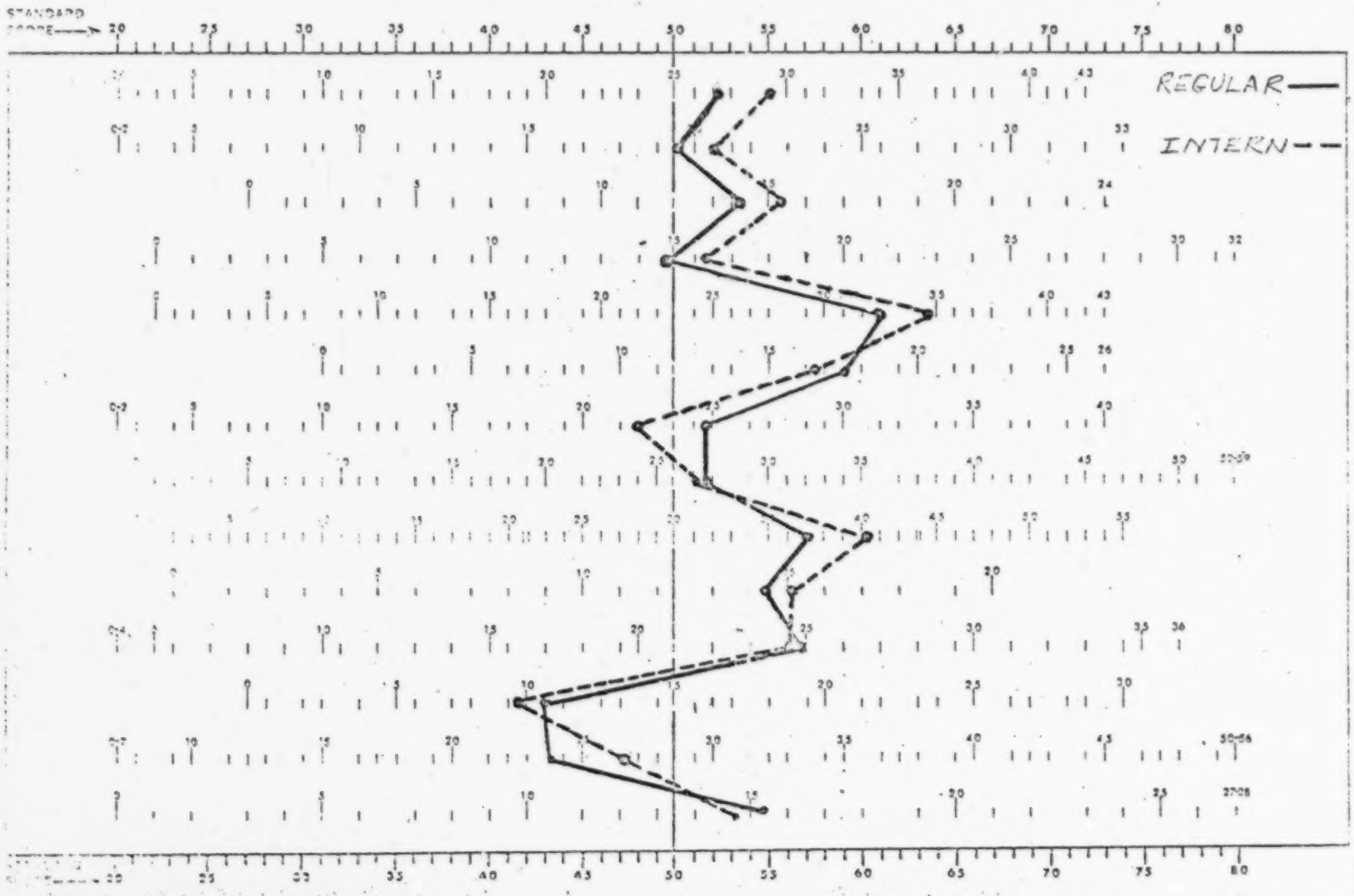
1.0053 P less than .4732

[$F_{14,30}(.90) = 1.7367$]

Scale	Regular S.D.	Intern S.D.	Pooled S.D.
1	6.10	5.90	5.97
2	5.83	4.80	5.16
3	4.32	3.49	3.78
4	5.23	5.28	5.26
5	5.62	5.22	5.35
6	6.84	4.80	5.54
7	4.30	5.88	6.41
8	9.00	10.00	9.68
9	8.14	7.12	7.47
10	3.96	2.93	3.30
11	3.93	4.12	4.06
12	4.37	4.24	4.28
13	4.43	4.44	4.79
14	4.48	3.79	3.96

ELEMENTARY OPI PRE-TEST PROFILES: FIGURE 2

DIRECTIONS: The raw score for each scale should be entered in the Raw Score column at the right. Then, in each row of the profile chart, circle the mark representing the raw score obtained on that scale. The standard score can then be read at the top or bottom of the chart. A line may be drawn connecting the circled marks. See the Manual for interpretation.



Trainees in the two secondary programs, unlike those in the two elementary programs, reveal significant differences on the OPI pretest. These differences are shown numerically in Table XX and graphically in Figure 3. The multivariate test is significant at the .10 level, and the univariate tests suggest that the source of the differences are to be found in Scales 8 (Impulse Expression), 9 (Personal Integration), 13 (Masculinity-Femininity), and 14 (Response Bias). In this connection, it should be remembered that the intern secondary program had a very vigorous recruiting and rigorous selection procedures, as pointed out in Chapter 2.

Table xx

Secondary OPI Pre-Test Scores

Scale	Regular Mean	Intern Mean	Univariate F	P less than
1	32.13	31.70	.06	.8043
2	21.60	24.07	2.29	.1377
3	17.60	16.03	1.46	.2328
4	20.00	17.50	2.05	.1593
5	36.27	30.97	7.05	.0111
6	18.73	15.53	3.19	.0814
7	24.53	27.43	2.13	.1519
8	33.40	26.07	7.79	.0078
9	36.40	43.97	7.92	.0074
10	14.33	17.33	5.41	.0249
11	25.80	27.83	2.92	.0947
12	7.13	9.10	1.39	.2453
13	23.13	28.30	14.49	.0005
14	14.13	18.50	10.18	.0027

[$F_{1,43}(.99) = 7.2697$]

F-Ratio for Multivariate Test

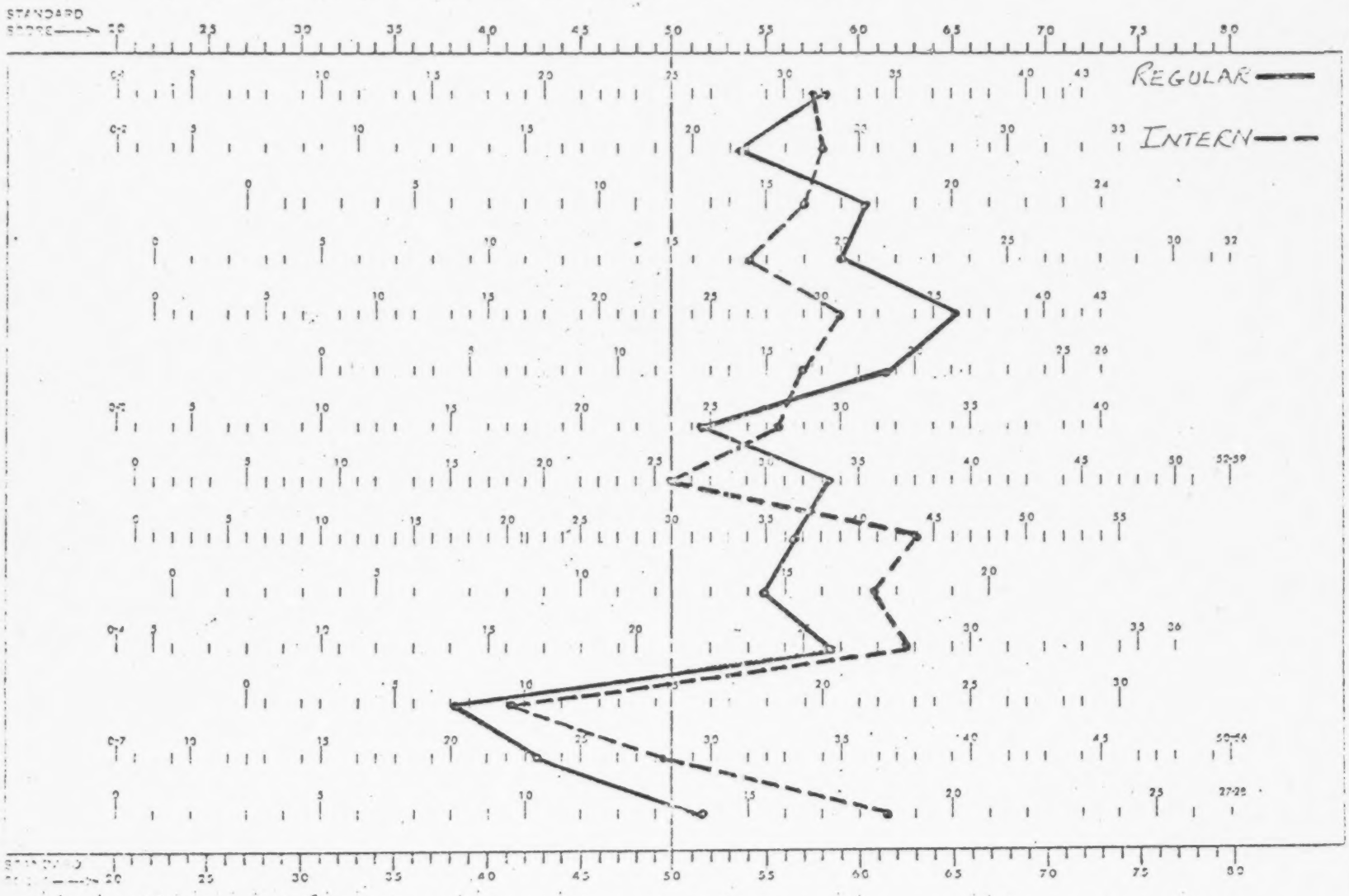
1.9129 P less than .0667

[$F_{14,30}(.90) = 1.7367$]

Scale	Regular S.D.	Intern S.D.	Pooled S.D.
1	6.25	5.09	5.49
2	6.39	4.44	5.16
3	3.44	4.37	4.09
4	[illegible]4	5.19	5.52
5	2.89	7.42	6.31
6	4.82	6.04	5.67
7	6.64	6.10	6.29
8	8.28	8.32	8.31
9	9.41	8.03	8.50
10	4.30	3.97	4.08
11	4.46	3.37	3.76
12	4.66	5.55	5.28
13	4.29	4.29	4.29
14	3.48	4.68	4.33

SECONDARY OPI PRE-TEST PROFILES: FIGURE 3

DIRECTIONS: The raw score for each scale should be entered in the Raw Score column at the right. Then, in each row of the profile chart, circle the mark representing the raw score obtained on that scale. The standard score can then be read at the top or bottom of the chart. A line may be drawn connecting the circled marks. See the Manual for interpretation.



At this point, it seems appropriate to make a brief detour from the plan of this report to compare the four groups of trainees with the group of entering freshmen on whom the Omnibus Personality Inventory was standardized. The means and standard deviations of the OPI Manual can be considered population parameters, so Z-Scores were computed on each scale for each group. The results are reported in Table XXI.

All Berkeley teacher education students apparently differ form the norm on four scales. All show greater Autonomy (Scale 5), greater religious skepticism (Scale 6), greater Altruism (Scale 11), and less of a Practical Outlook (Scale 12) than the normative group. With the exception of the regular elementary group all show a propensity for reflective thought (Scale 1) and Estheticism (Scale 3) greater than the norm. All but the regular secondary group show greater Personal Integration (Scale 9). Both regular groups score below the norm on Masculinity-Feminity (Scale 13), perhaps reflecting the preponderance of females in these two groups, while both elementary and secondary interns score high on Scale 10 which signifies low Anxiety Levels. Finally, regular secondary program trainees are apparently more Complex (Scale 4) and more likely to Impulse Expression (Scale 8) than the norm, while secondary interns are more Theoretically Oriented (Scale 2) and more Socially Extroverted (Scale 7) than the norm.

In summary, it seems that all students in U.C., Berkeley's teacher education curriculums display the liberalism earlier thought to be associated only with the two intern programs. However, some groups seem to fit the liberal tag better than others, when contrasted with the norm. For example, of the first twelve OPI scales, which are the most useful ones for comparative purposes,

the trainees in the regular elementary program show significant differences from the norm on five scales, those in the elementary intern and regular secondary curriculums show differences on eight scales, and the secondary interns on ten scales. All of these differences are in the liberal or progressive direction. Comparison of groups against the norm also indicates that the interns--both elementary and secondary--are less conventional than those in the two regular programs.

Table XXI

OPI Scores: Pre-Test versus Norm

Scale*	Norm Mean	Norm S.D.	Regular Elementary Z-Score	Intern Elementary Z-Score	Regular Secondary Z-Score	Intern Secondary Z-Score
1 TI	25.3	7.9	1.0	2.6+	3.3+	4.4+
2 TO	19.6	5.7	.0	.9	1.4	4.3+
3 Es	12.2	5.2	2.2	3.3+	4.0+	4.0+
4 Co	15.3	5.5	- .3	1.0	3.3+	2.2
5 Au+	23.4	8.9	4.2+	7.0+	5.6+	4.7+
6 RO+	11.8	6.2	3.6+	4.2+	4.4+	3.3+
7 SE	23.4	7.1	.7	-1.1	.6	3.1+
8 IE	25.6	8.9	1.0	1.0	3.4+	.3
9 PI	29.9	10.5	2.7+	5.4+	2.4	7.3+
10 AL	12.3	4.6	1.8	3.4+	1.7	6.0+
11 Am+	20.8	5.6	2.8+	3.7+	3.5+	6.9+
12 PO+	14.8	6.4	-2.6+	-4.5+	-4.6+	-4.9+
13 MF	28.4	7.1	-2.6+	-1.8	-2.8+	- .1
14 RB	13.4	4.4	1.6	1.6	.6	6.3+

Z (.995) = 2.58 Z (.005) = -2.58

* 1. Thinking Introversion
2. Theoretical Orientation
3. Estheticism
4. Complexity
5. Autonomy
6. Religious Orientation
7. Social Extroversion
8. Impulse Expression
9. Personal Integration
10. Anxiety Level
11. Altruism
12. Practical Outlook
13. Masculinity-Femininity
14. Response Bias

The Tests for Change:

In order to assess what personality changes (as measured by the OPI) occurred during the graduate year of teacher education, each group, indeed each individual was used as his own control. Post-test minus pre-test scores were found for each subject, and the average change was computed and tested against zero, i.e., no change. Once it was determined whether or not a particular group changed, it could be learned if one group changed more than another by repeating the process with the difference scores. This process is repeated in Tables XXII and XXIIIwhich follow.

As shown in the first part of Table XXII, the test for changes in the OPI scores of the regular elementary student teachers is not significant. The second part of the table shows the same test for the elementary interns. In the latter case, the multivariate test is negative: there is no significant difference. However, Impulse Expression (Scale 8) does show a univariate significant difference. This seeming contradiction is caused by the inability of the univariate test to account for the correlation between variables in a repeated measures design such as this. Unless this change is specifically hypothesized, the statistical decision should be based upon the multivariate test. The final part of the table has the test for the mean difference in changes, indicating that there is no difference; both groups behaved similarly, i.e., their personality characteristics did not change appreciably as a result of the impact of the curriculums.

The test for changes in the regular secondary group, Table XXIII, indicates no change, whereas, the secondary interns' does indicate significant changes,

The GIP's Thinking Introversion (Scale 1), Social Extroversion (Scale 7), Anxiety Level (Scale 10), and Response Bias (Scale 14) scores all decreased (a decrease on Scale 10 reflects an increase in anxiety). Therefore, it would seem that exposure to the secondary internship curriculum caused the trainees to enjoy unstructure, intellectual pursuits less, derive less enjoyment from social interaction, and be more willing to admit anxieties. However, the decrease in Scale 14 (Response Bias) indicates this is a more realistic description of the GIP students than that presented in the pre-test.

In this connection, it should be pointed out that in this particular year, in the elementary intern program, instead of the usual educational psychology course, a psychiatrist was employed to meet with the interns in a weekly "professional-personal" problems seminar and also with the staff in a separate weekly "conference." This was that program's attempt to cope with the reality shock problem and it was so successful that it was agreed that the same plan should also be used with the regular elementary program the following year.

The OPI is a multifaceted instrument--an oblique measure. Used at the end of an intense, tramatic experience as student teaching is for some and

fulltime internship teaching is for most, the OPI focused in on the trainees' personalities at a time of great personal and emotional disruption for many who saw themselves as innovators and change agents in a "hostile", conservative public school environment. Starting as idealists, for the secondary interns, the experience of working full-time in a "safe" public school milieu was a reality shock, plus five on the Richter Scale! Many interns were "shocked," "hurt," frustrated, antagonized at the problem of learning the hard way what the real day-to-day world of the teacher was. To a large extent, this "reality shock" helps to explain interns' change to a more conservative position on certain OPI scales by the end of the internship teaching year. When the first year's teaching experience has been effectively integrated into their personalities, perhaps their personal orientation to life again will be in the more liberal tradition in which they began the training program.

If the changes in Scales 1, 7, 8, 10, and 11 actually reflect "real" changes in the secondary interns, it would seem that the effects of the training program produced changes in the "wrong" direction. However, the decrease in Response Bias (Scale 14) suggests the interns are simply being more honest on the post-test than they were on the pre-test. The fact that, of all four programs, only the GIP regularly requires the OPI and uses the profiles as one of the several admissions factors lends credence to this interpretation, for on the post-test there was no longer a stimulus to "look good". Whatever the case may be, the multivariate

test for the mean difference in change between the two groups was not significant. Comparing the two secondary groups on the post-test it appears that the changes in the regular secondary group tended to be in the same direction as those in the secondary intern group. (Tables of OPI pre-test and post-test means appear in the Appendix.)

Table XXII

Changes in Elementary OTI Scores
(Post-Test Minus Pre-Test)

Regular Elementary

(N = 15)

Scale	Mean Change	Standard Deviation	Univariate F	P less than
1	.33	5.81	.05	.8275
2	.33	4.37	.09	.7720
3	.73	2.31	1.51	.2399
4	1.47	4.01	2.00	.1791
5	.73	3.45	.68	.4246
6	- 1.07	5.80	.51	.4880
7	- 2.20	6.84	1.55	.4332
8	1.53	6.77	.77	.3953
9	.53	7.11	.08	.7757
10	- .47	2.85	.40	.5363
11	- .87	5.01	.45	.5140
12	- 1.40	2.61	4.31	.0570
13	.53	4.25	.25	.6269
14	- .87	4.57	.54	.4743

[$F_{1,14}(.99) = 8.8616$]

F-Ratio for Multivariate Test
2.0101 P less than .5079

[$F_{14,1}(.90) = 61.073$]

Intern Elementary

(N = 30)

Scale	Mean Change	Standard Deviation	Univariate F	P less than
1	.10	4.44	.01	.9026
2	.17	4.31	.04	.8337
3	.60	2.62	1.57	.2199
4	.73	3.38	1.41	.2558
5	.67	3.47	1.11	.3010
6	1.07	2.15	7.39	.0110
7	.33	4.66	.15	.6983
8	2.90	4.37	13.19	.0011
9	.73	5.38	.58	.4534
10	- .40	2.59	.71	.4054
11	.03	4.46	.01	.9676
12	.03	3.32	.00	.9565
13	.83	3.89	1.38	.2499
14	- .07	2.28	.01	.9122

[$F_{1,29}(.99) = 7.5976$]

F-Ratio for Multivariate Test

1.4456 P less than .2380

[$F_{14,16}(.90) = 1.9529$]

Regular versus Intern Elementary
(Intern Minus Regular)

Scale	Mean Difference in Change	Standard Deviation	Univariate F	P less than
1	- .23	4.93	.02	.8817
2	- .17	4.33	.01	.9087
3	- .13	2.52	.03	.8682
4	- .73	3.60	.41	.5231
5	- .07	3.46	.00	.9518
6	2.13	3.75	3.24	.0791
7	2.53	5.47	2.15	.1501
8	1.37	5.27	.67	.4172
9	.20	5.94	.01	.9158
10	.07	2.68	.01	.9377
11	.90	4.64	.38	.5431
12	1.43	3.11	2.13	.1517
13	.30	3.98	.06	.8126
14	.80	3.75	.46	.5032

[$F_{1,43}(.99) = 7.2697$]

F-Ratio for Multivariate Test
.7943 P less than .6585

[$F_{14,30}(.90) = 1.6367$]

Table XXIII

Changes in Secondary OPI Scores
(Post-Test Minus Pre-Test)

Regular Secondary

(N = 15)

Scale	Mean Change	Standard Deviation	Univariate F	P less than
1	- .40	3.91	.16	.6977
2	- .13	3.64	.02	.8893
3	.07	2.43	.01	.9171
4	.07	3.45	.01	.9415
5	.00	1.92	.00	1.0000
6	.00	2.00	.00	1.0000
7	- .20	2.96	.07	.7972
8	.13	3.74	.02	.8922
9	- .13	5.71	.01	.9292
10	- 1.00	3.16	1.50	.2509
11	- .13	4.05	.02	.9004
12	- .40	3.11	.25	.6264
1	- 1.13	3.02	2.11	.1683
14	- .40	2.53	.53	.5502

[$F_{1,14}(.99) = 8.8616$]

F-Ratio for Multivariate Test
2.5560 P less than .4583

[$F_{14,1}(.90) = 61.073$]

Intern Secondary

(N = 30)

Scale	Mean Change	Standard Deviation	Univariate F	P less than
1	- 2.63	3.77	14.61	.0007
2	- 1.00	3.16	3.00	.0939
3	- .87	2.71	3.06	.0908
4	.37	4.18	.23	.6346
5	2.17	5.12	5.36	.0279
6	.57	3.99	.61	.4428
7	- 3.10	3.41	24.83	.0001
8	3.03	6.17	7.26	.0117
9	- 1.57	8.28	1.07	.3086
10	- 2.23	3.52	12.08	.0017
11	- 1.90	3.86	7.26	.0117
12	- .73	3.06	1.72	.1999
13	- .47	3.80	.45	.5069
14	- 2.33	4.29	8.86	.0059

[$F_{1,29}(.99) = 7.5976$]

F-Ratio for Multivariate Test

2.5603 P less than .0377

[$F_{14,16}(.99) = 1.9529$]

Regular versus Intern Secondary
(Intern Minus Regular)

Scale	Mean Difference in Change	Standard Deviation	Univariate F	P less than
1	-2.23	3.82	3.42	.0712
2	- .87	3.33	.68	.4146
3	- .93	2.63	1.26	.2672
4	.30	3.96	.06	.8118
5	2.17	4.35	2.48	.1227
6	.57	3.47	.27	.6081
7	-2.90	3.27	7.88	.0075
8	2.90	5.50	2.78	.1025
9	1.43	7.54	.36	.5508
10	-1.23	3.41	1.31	.2588
11	-1.77	3.93	2.03	.1619
12	.33	3.07	.12	.7337
13	.67	3.57	.35	.5577
14	-1.93	3.81	2.57	.1160

[$F_{1,43}(.99) = 7.2697$]

F-Ratio for Multivariate Test
.9287 P less than .5411

[$F_{14,30}(.90) = 1.7367$]

Some Inter-Group Comparisons:

Up to this point, the inter-group comparisons have been limited to comparing the two elementary programs with each other, and the two secondary programs with each other. On a post hoc basis, the four groups of trainees were compared on their pre-test and post-test OPI scores. The "t" statistic with a .10 level of confidence was used to determine whether the groups were significantly different on each of the scales. The formula used was:

$$'t' = \frac{\bar{X}_1 - \bar{X}_2}{Sp\sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

These inter-group comparisons are graphed in Figures 4 and 5. The differences that are significant at the .10 level are noted in Tables XXIV and XXV. The regular secondary group is different from all others on most scales, and only on one scale (Social Extroversion) were no differences found among the four groups. Although there were differences among the groups on all of the scales (with the exception of Scale F, Social Extroversion), the differences are of such a "hodge-podge" nature that a meaningful description of the inter-group differences can not be made.

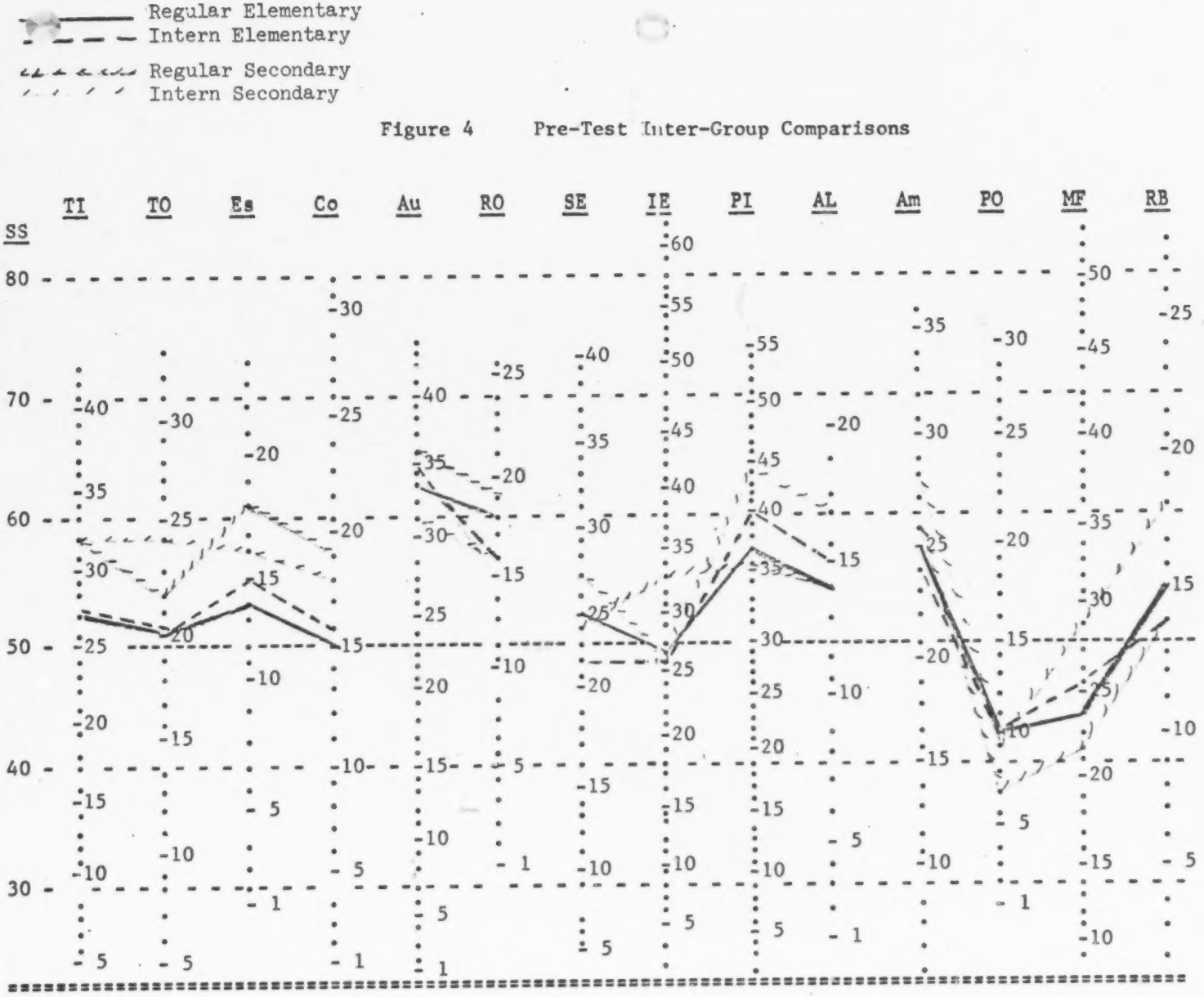


Figure 4 Pre-Test Inter-Group Comparisons

71

Table XXIV
All Groups Pre-Test

TI
both secondary groups are diff from both elementary groups (higher)
reg. ele. is the most different

TO
the intern secondary are diff from both elementary groups (higher)

Es
the reg. secondary is diff than all other groups (higher)
the intern secondary is diff from reg. elem. (higher)

Co
the reg. secondary is diff from both elem. progs. (higher)

Au
the intern secondary is diff from intern elem, and reg. secondary (lower)

RO
the reg. secondary is diff from the intern elem. and intern secondary (higher)

SE
the intern elem. is diff from regular elem amd intern secondary (lower)
the reg. secondary is diff from the intern secondary (lower)

IE
the regular secondary is diff from all other groups (higher)

PI
the intern secondary is diff from all other groups (higher)
the intern elem. is diff from the reg. secondary (higher)

AL
the intern secondary is diff from all other groups (higher)

Am
the intern secondary is diff from all other groups (higher)
the regular secondary is diff from the intern elem. (higher)

PO
the regular secondary is diff from all other groups (lower)

MF
each group is significantly diff from each other group
=rank order high to low = intern sec., intern elem., reg. elem.,
reg. sec..

RB
the intern sec. is diff from all other groups (higher)

Post-Test Figure 5

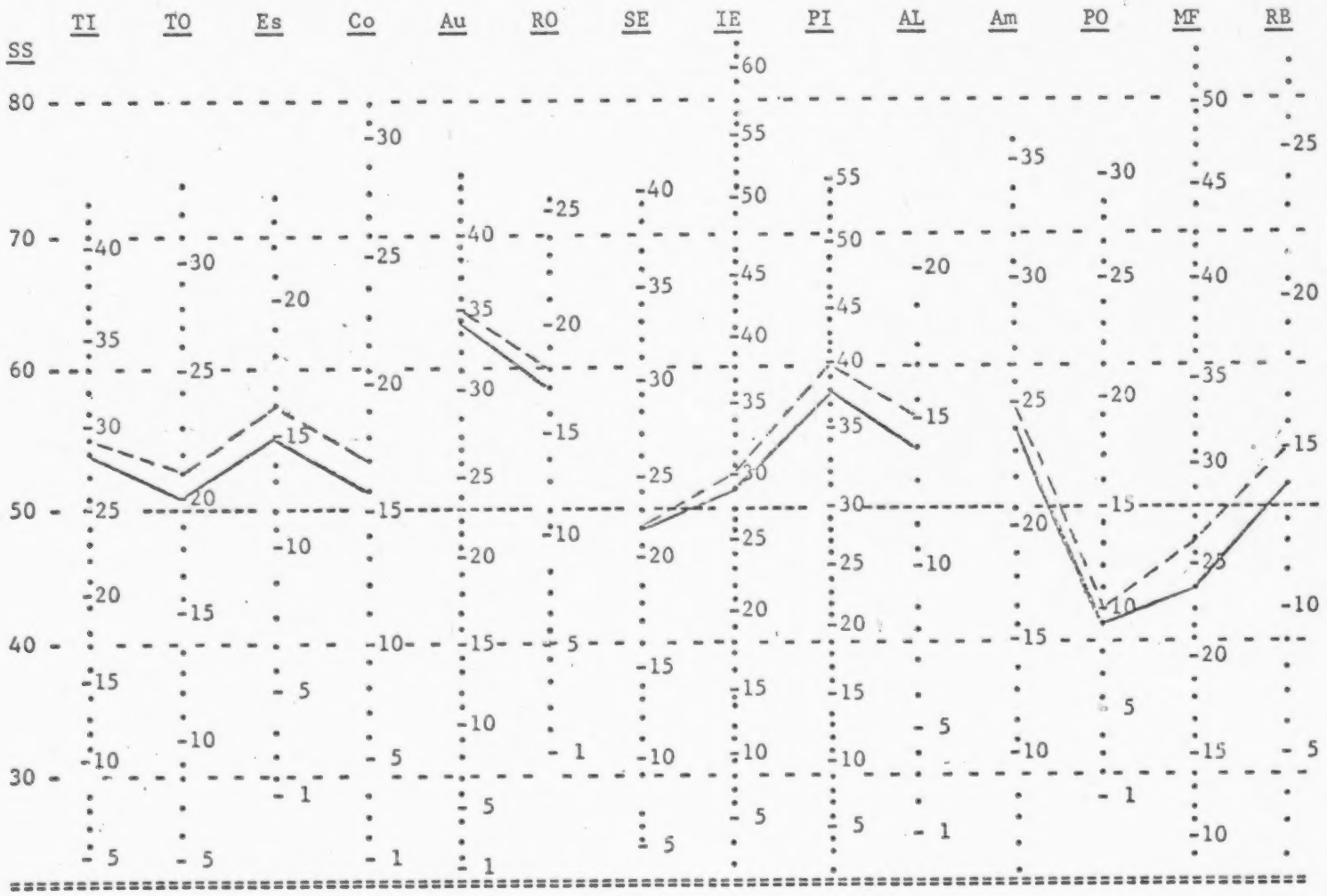


Table XXV
All Groups Post Test

TI
the regular secondary is diff from all other groups (higher)

TO
the intern secondary is diff from the reg. elem. (higher)

ES
the reg. sec. id diff from all other groups (higher)

Co
the regular secondary is diff from the reg. elem. and intern elem (higher)

Au
the reg. sec. is diff from the intern sec. (higher)

RO
the reg. sec. is diff from the intern sec. (higher)

SE
no differences

IE
the regular sec. is diff from reg. elem. and intern sec. (higher)

PI
the reg. sec. is diff from intern elem. and intern sec. (lower)
the intern sec. is diff from the reg. elem. (higher)

AL
the reg sec. is diff from intern elem. and intern sec. (lower)

Am
the reg. elem. is diff from intern sec. (lower)

PO
the reg. sec. is diff from intern elem and reg elem. (lower)
the intern sec. is diff from intern elem. (lower)

MF
the reg sec is diff from all other groups (lower)
the reg elem is diff from intern elem (lower)

RB
the regular progs are diff from the intern progs (lower)

Summary

Trainees in the elementary programs tended to be alike, while those in the secondary programs tended to differ from each other in personality characteristics, as measured by the OPI pre-test. Thus, the hypothesis regarding differences in personality characteristics must be partially rejected. The regular and intern groups in the elementary program did not differ significantly in personality characteristics, but the regular and intern groups in the secondary program did differ somewhat. Trainees in the regular and intern elementary programs did not change significantly as a result of their training; neither did trainees in the regular secondary program. The secondary interns, however, did change, becoming less theoretical, less extroverted, more inclined to exhibit anxiety, and less needful of social acceptance. Other inter-group comparisons did not reveal any pattern of significant differences in personality characteristics. Thus, the hypothesis that the two internship curriculum trainees would differ significantly from those in the two regular programs in the amount and direction of change, as measured by the OPI, is rejected. Both secondary groups showed signs of change, with the GIP showing the most.

Of interest is the tangential finding that all four groups of students differed significantly from the norm group on which the OPI was standardized, in the direction of being more liberal and progressive in their personality characteristics.

Chapter 5 Attitude Toward Teaching

As a measure of the trainees' attitude towards teaching, they were asked to perform the Crossman Q-Sort. The purpose of administering the Q-Sort was to determine whether the students held traditional (conservative) attitudes towards teaching or whether they were more liberal (progressive) in their attitude toward students, and whether these attitudes changed as a result of their one year exposure to a professional program of teacher preparation. As in the case of the OPI, each group was asked to do this test at the time of entry into the program, and also at the completion of it. Inter-group and pre-vs. post-test analyses were done and are presented in this chapter.

The Q-Sort: The Crossman Q-Sort was developed by the Graduate Internship Program staff as an indicator of teacher attitude and it was administered by them annually on a pre-post-test basis over a period of approximately 10 years. The staff found it was especially helpful in the screening and selection process when used in conjunction with data secured from individual and group interviews and the OPI.

The Sort consists of 98 items (Appendix IV). Each item is a declarative statement about teaching strategies and teacher and student roles and responsibilities. For example, statement #1 says, "I think schools should concentrate on the fundamentals." The trainees were instructed to place each statement in one of seven piles varying from pile 1 ("most descriptive") to pile #7 ("most undescriptive"). The instructions stated, "You are being asked to indicate the degree to which each statement describes your behavior and attitudes toward youth and teaching by the way you arrange the cards you have been given."

Pile #4 was neutral, "These are neither descriptive nor undescriptive." The "trick" to the sorting comes from the requirement that it must result in finally selecting 14 cards and only 14 cards for each pile and placing each pile in the appropriately marked envelope. The procedure generally takes about half an hour (see Appendix III for copy of the instructions).

Analysis: Analysis of the Q-Sort responses is more difficult than that of the OPI since the Q-Sort has 98 individual items. Statistical tests on such a great number of items is impossible when there are but 90 subjects, so the data were condensed. Items which had the greatest discrimination power were selected out. The BC-TRY Cluster Analysis porgram was used for this purpose, with the secondary intern group serving as a reference group on which the analysis was performed. The resulting clusters are shown in Table XXVI. Those clusters labeled with an "(R)" were reflected; that is the signs of their factor coefficients were reversed so that liberal or progressive attitudes are represented by lower scores on all clusters. The cluster scores are simply weighted sums of item scores, with the oblique factor coefficients used as the weights. However, rather than use all weights, only those of items whose inclusion raised the culumative reliability were used in forming the clusters.

The defining items for each of the clusters also are listed in Table XXVI. The signs, positive or negative, associated with each item in the cluster are the original signs. The titles of the clusters have been derived logically from the items themselves, with four statements making up Cluster 1, Broad Standards for Students' Behavior; two statements each making up Clusters 2 and 3, Teachers Role in Relation to Students, and Regard for the Worth of Students. Four statements form Cluster 4, Belief in Students' Capabilities; two, Cluster 5, Flexability in Response to Students; three, Cluster 6, Initiative and Responsibility for

Class Discussions; two each for Clusters 7, Source of Satisfaction with Teaching, and 8, Critical Regard for Students. The characteristics of high scores and low scores for each of the clusters are delineated. The purpose of the cluster analysis is to show that, while theoretically there are 98 dimensions of attitude on which the trainees can be measured and compared, in fact, it turns out that there are only eight on which this can be done. Higher scorers agree with items having positive factor coefficients, and disagree with items having negative coefficients. Low scorers disagree with items having positive factor coefficients, and agree with items having negative coefficients.

Table XXVI - Cluster Analysis of the Q-Sort

Cluster 1 (R) Broad Standards for Students' Behavior

Item No.	Item Statement	Factor Coeff.
9	I think young people should have time to think, daydream, and even loaf.	-.8035
26	I think that students should show more respect for teachers and other authority figures.	.7987
25	I think students should be held to more rigid standards of cleanliness and dress.	.7969
63	I find the non-conforming student exciting to work with.	-.7479
	Reliability Coefficient (Definers only)	.9047

High scorers agree that students should conform to rigid standards for behavior and appearance.

Low scorers agree that students' behavior should be judged by flexible standards that allow for non-conformity.

Cluster 2(R): Teachers' Role in Relation to Students

Item No.	Item Statement	Factor Coeff.
70	I encourage my students to talk to me about their troubles.	-.8042
24	I think it is unwise to let young people be by themselves a lot without supervision from grown-ups.	.7349
	Reliability Coefficient (Definers Only)	.7881

High scorers agree that the teacher's role in relation to students should be that of a supervisor.

Low scorers agree that the teacher's role in relation to students should be that of a counselor.

Table XXVI (Continued)

Cluster 3(R)Regard for the Worth of Students

Item No.	Item Statement	Factor Coeff.
11	I think the schools are spending too much time and money on the education of inherently incapable students.	.8388
31	I give my students extra privileges when they behave well.	.7072
	Reliability Coefficient (Definers Only)	.8624

High scorers agree that schooling is a privilege students must earn by demonstrating proven capabilities and behaving well in conformity to the teacher's standards.

Low scorers do not agree that students must prove their right to schooling or behave well in conformity to the teacher's standards in order to deserve privileges.

Cluster 4: Belief in Students' Capabilities

Item No.	Item Statement	Factor Coeff.
20	I think we tend to pamper youth too much these days.	-.7311
39	I feel that the majority of students take their responsibility seriously.	.7154
18	I have strict, well-established rules for my class.	-.7103
40	I feel that most pupils are resourceful when allowed to work on their own.	.6785
	Reliability Coefficient (Definers Only)	.8888

High scorers agree that students are capable of taking their responsibilities seriously and resourceful when working on their own.

Low scorers agree that students' capabilities cannot be relied upon without the added incentive of strict, well-established rules to compel their sense of responsibility.

Table XXVI (Continued)

Cluster 5: Flexibility in Response to Students

Item No.	Item Statement	Factor Coeff.
72	I am easy going and relaxed with my students.	.8479
4	I often change my teaching plans for a period in order to capitalize on a spontaneous classroom situation.	.7182
	Reliability Coefficient (Definers Only)	.8326

High scorers agree that the teacher should be flexible in response to students in order to capitalize on spontaneous classroom situations that may arise in an easy going and relaxed atmosphere.

Low scorers do not agree that the teacher should be easy going, relaxed and flexible in response to students and classroom situations.

Cluster 6 (R) Initiative and Responsibility for Class Discussions

Item No.	Item Statement	Factor Coeff.
66	I feel uncomfortable when discussions touch upon areas about which I know little.	.7816
49	I dread class discussions which bring up questions of sex.	.7437
68	It upsets me when I cannot establish contact with or "reach" a student.	.6003
	Reliability Coefficient (Definers Only)	.9033

High Scorers agree that the teacher should take initiative and responsibility for class discussions, know more about the subject under discussion than the students do, and maintain contact with all students at all times.

Low scorers do not agree that all initiative and responsibility for the substance and process of class discussion lies with the teacher and are not upset when they cannot maintain contact with or "reach" every student in every situation.

Table XXVI (Continued)

Cluster 7 (R)Source of Satisfaction with Teaching

Item No.	Item Statement	Factor Coeff.
88	I feel that a teacher should not be expected to do work for which he is not paid.	.8176
41	I find some of my greatest satisfactions in working with my students.	-.7938
	Reliability Coefficient (Definers Only)	.8271

High scorers agree that the primary source of satisfaction with teaching is the pay that it earns, so that a teacher should not be expected to do work for which he is not paid.

Low scorers agree that the primary source of satisfaction lies in the teaching itself, in working with students.

Cluster 8 (R)Critical Regard for Students

Item No.	Item Statement	Factor Coeff.
62	Students who go along with group norms often have trouble thinking for themselves.	.7471
76	I joke and have fun with my students.	-.6704
	Reliability Coefficient (Definers Only)	.7958

High scorers agree in their critical regard for students who go along with group norms, inferring from conforming behavior a certain lack of originality of thought.

Low scorers agree in being less critical of students' behavior and less austere in their relationships with students.

NOTE: Clusters 1, 2, 3, 6, 7, and 8 are reflected; that is, the signs of their factor coefficients are reversed, so that liberal or progressive attitudes are represented by low cluster scores on these clusters. Clusters 4 and 5 are defined such that liberal or progressive attitudes are represented by high cluster scores.

Pretest Cluster Scores: The mean cluster scores for the elementary school trainees--regular and intern--and the appropriate statistical tests are shown in Table XXVII. A low mean score represents a liberal or progressive attitude since the original Q-Sort utilized a "1" to mean "very descriptive" and a "7" to mean "very undescriptive," though in the process of analysis the scores were made symmetric about zero by subtracting four from each score. Hence zero can be considered a neutral position. Maxima and minima vary with each cluster and can be roughly located at plus and minus three standard deviations. Like OPI scores, the cluster profiles are shown graphically so that "standardized" values can be read directly.

As with the OPI profiles for students in the two elementary programs, the pretest Q-Sort Cluster profiles are not significantly different. Their negative scores indicate that both groups hold liberal or progressive attitudes toward teaching. This can be seen in Figure 6. Also, the differences found on the pretest for the two secondary programs are not significant, as is shown in Table XXVIII and Figure 7.

The correlation matrix for all fourteen OPI scales with all eight Q-Sort Clusters is available in the Appendix. The strong negative correlations of Complexity (Scale 4) and Autonomy (Scale 5) with Cluster 1, -.591 and -.676, and the high positive correlation of Practical Outlook (Scale 12), +.676, confirm the validity of the preceding interpretation.

The generalization stands, i.e., these groups are more alike than different.

Table XXXVII

Elementary Pre-Test Q-Sort Cluster Scores

Cluster	Regular Mean	Intern Mean	Univariate F	P less than
1	- 5.05	- 7.23	1.09	.3014
2	- 4.57	- 4.28	.21	.6483
3	- 1.82	- 1.77	.02	.8764
4	- 1.86	- 1.74	.03	.8749
5	- 3.49	- 2.59	4.22	.0461
6	- 1.35	- .91	.55	.4611
7	- 4.51	- 4.30	.12	.7280
8	- 1.01	- .89	.05	.8164

[$F_{1,43}(.99) = 7.2697$]

F-Ratio for Multivariate Test

1.0786 P less than .3997

[$F_{8,36}(.90) = 1.8510$]

FIGURE 6

ELEMENTARY Q-SORT PRE-TEST CLUSTER PROFILES

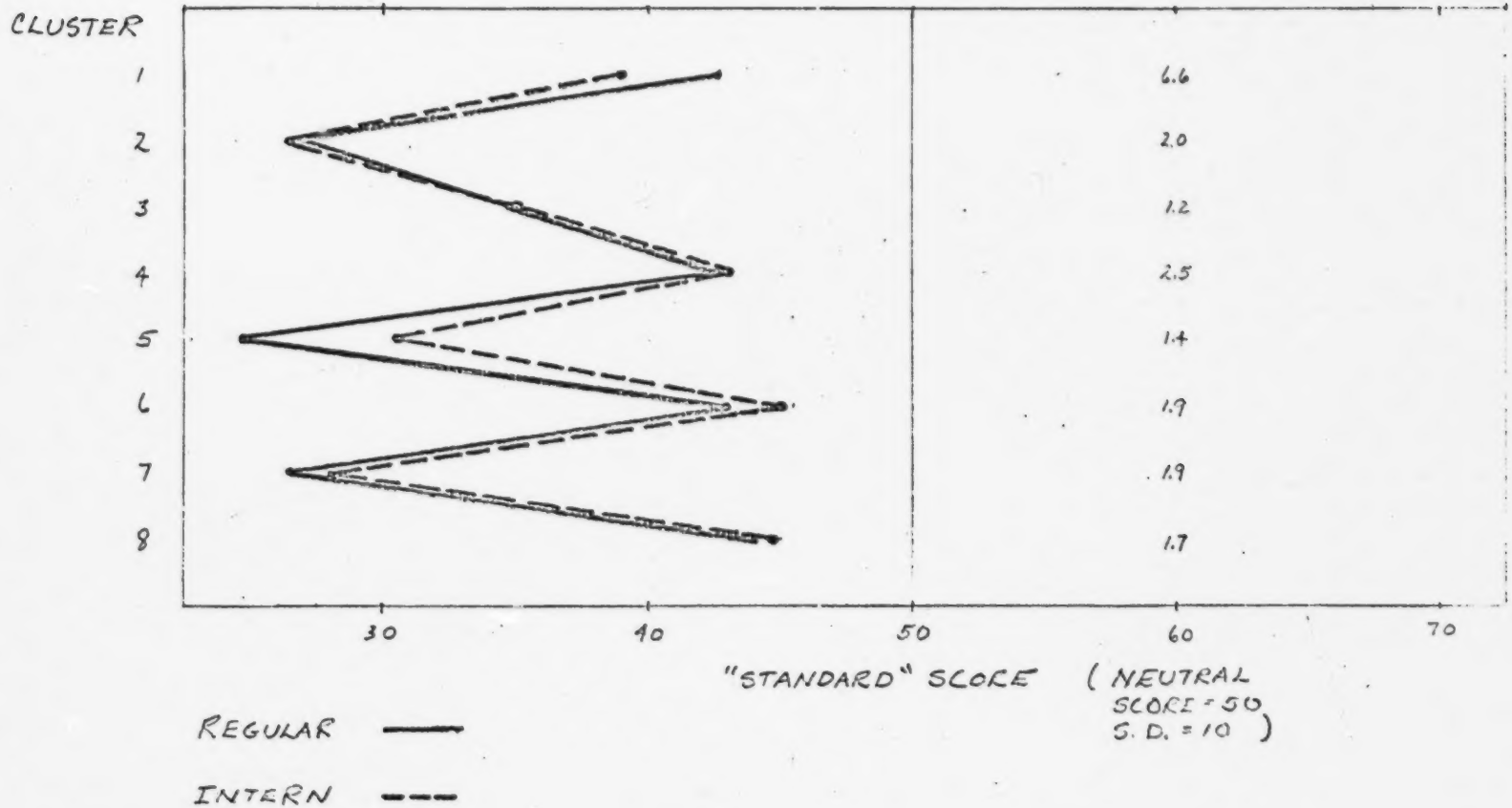


Table XXVIII

Secondary Pre-Test Q-Sort Cluster Scores

Cluster	Regular Mean	Intern Mean	Univariate F	P less than
1	- 12.85	- 5.45	6.43	.0150
2	- 3.22	- 4.83	3.29	.0769
3	- 2.09	- 1.50	1.48	.2307
4	- 2.23	- 2.39	.03	.8720
5	- 3.58	- 3.36	.18	.6707
6	- .84	- 1.16	.20	.6566
7	- 3.88	- 4.27	.31	.5786
8	- .91	- .76	.13	.7245

[$F_{1,43}(.99) = 7.2697$]

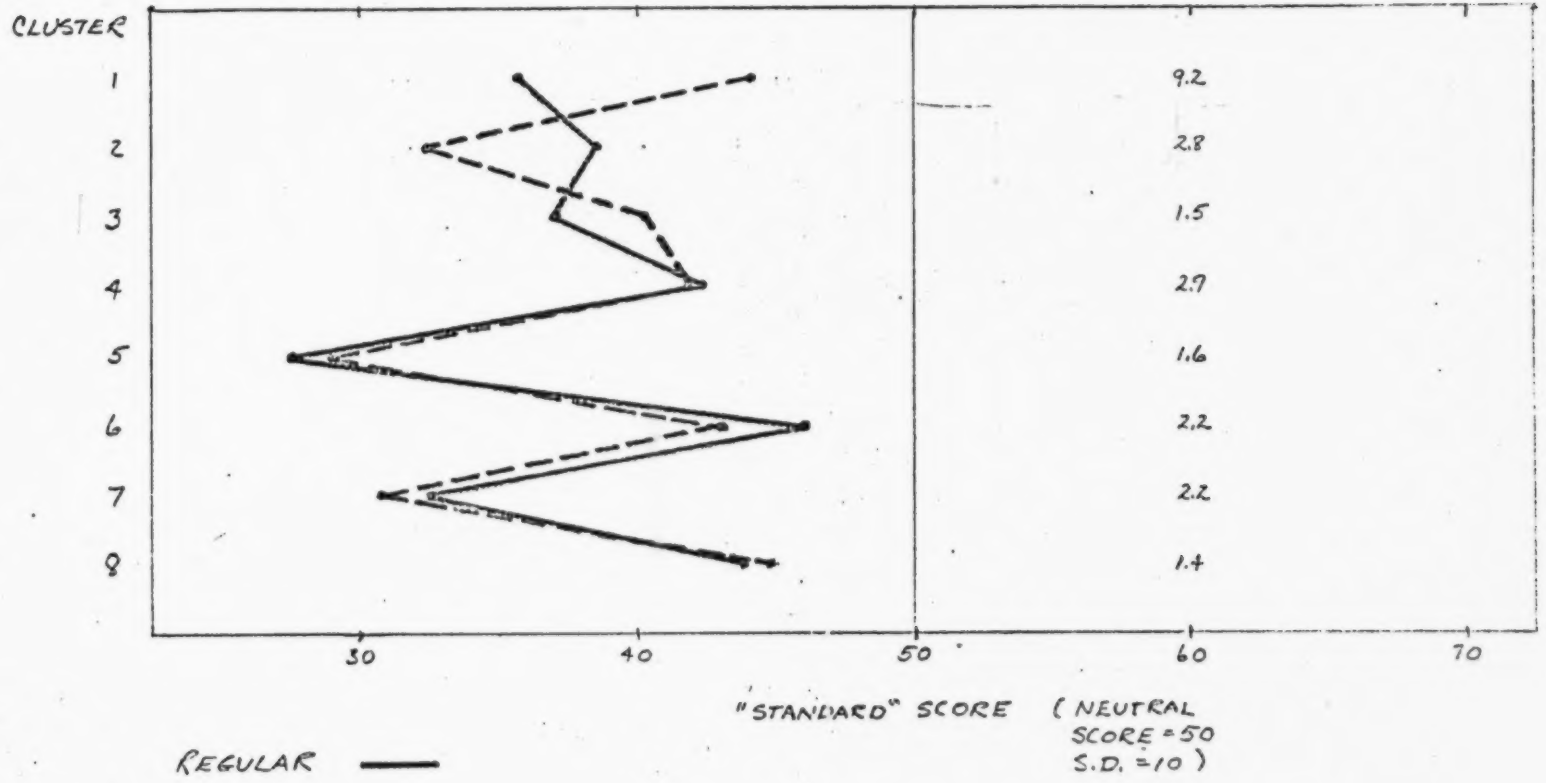
F-Ratio for Multivariate Test

1.2306 P less than .3099

[$F_{8,36}(.90) = 1.8510$]

FIGURE 7

SECONDARY Q-SORT PRE-TEST CLUSTER PROFILES



Post-Test Cluster Scores: Having completed the initial comparisons of the regular and intern programs for both the elementary and secondary levels, we now turn to the assessment of changes via the Q-Sort, that occurred during the graduate year of professional preparation. For this, each group, indeed each subject, was used as its own control. Post-test minus pre-test scores were found for each subject, and the average change computed and tested against zero, i.e., no change. Once it was determined whether or not a particular group changed, it was possible to learn if one group changed more than another group by repeating a multivariate analysis of variance in the mean differences in change in cluster scores. The results of this repeated testing process with Q-Sort Cluster Scores are shown in Tables XXIX and XXX. Significant differences were found in the two intern groups, both caused by lower and hence more liberal scores on the post-test.* It would appear the intern programs do bring about a more progressive attitude in their trainees. The results for the secondary intern program corroborate the earlier doubts about the changes indicated by the OPI differences, i.e., the apparent changes in the GIP's OPI scores seem to be due to a more accurate trainee response (indicated by a lower score on the Response Bias scale).

A closer examination of Tables XXIX and XXX shows some interesting minor variations to the multivariate-based generalization of significant change. Using a univariate analysis of variance with Cluster 1, Broad Standards for Students' Behavior, the regular elementaries became more liberal. On Cluster 4, Belief in Students' Capabilities, the elementary

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*An additional table which includes the means and standard deviations of all 98 items on the Q-Sort for the pre-test and post-test is included in Appendix VI.

interns became more progressive (Table XXIX). In Table XXX, it can be seen that the secondary interns became more progressive as revealed by their score on Cluster 1, Broad Standards for Students' Behavior.

Table XXIX

Changes in Elementary Q-Sort Cluster Scores
(Post-Test Minus Pre-Test)

Regular Elementary

(N = 15)

Cluster	Mean Change	Standard Deviation	Univariate F	P less than
1	- 4.71	5.64	10.48	.0060
2	.38	1.74	.72	.4113
3	.13	1.09	.22	.6450
4	- .90	2.46	1.99	.1804
5	.08	1.79	.03	.8719
6	- .05	1.52	.02	.8954
7	.83	2.50	1.65	.2201
8	- .33	2.50	.68	.4249

[$F_{1,14}(.99) = 8.8618$]

F-Ratio for Multivariate Test
1.2008 P less than .4112

[$F_{8,7}(.90) = 2.7516$]

Intern Elementary

(N = 30)

Cluster	Mean Change	Standard Deviation	Univariate F	P less than
1	- 1.86	5.62	3.28	.0804
2	- .65	2.33	2.34	.1373
3	.27	1.30	1.34	.2560
4	- 1.19	2.79	5.47	.0265
5	- .26	1.86	.59	.4489
6	- .37	1.75	1.32	.2605
7	.06	1.47	.05	.8180
8	- .51	1.77	2.46	.1277

[$F_{1,29}(.99) = 7.5976$]

F-Ratio for Multivariate Test

2.3692 P less than .0523

[$F_{8,22}(.90) = 1.9668$]

Regular versus Intern Elementary
(Intern Minus Regular)

Cluster	Mean Difference in Change	Standard Deviation	Univariate F	P less than
1	2.85	5.63	2.57	.1163
2	- 1.03	2.16	2.28	.1379
3	.14	1.23	.13	.7186
4	- .29	2.68	.12	.7300
5	- .34	1.84	.34	.5655
6	- .31	1.68	.35	.5569
7	- .76	1.86	1.68	.2014
8	.02	2.04	.00	.9702

[$F_{1,43}(.99) = 7.2697$]

F-Ratio for Multivariate Test
.9750 P less than .4708

[$F_{8,36}(.90) = 1.8510$]

Table XXX

Changes in Secondary Q-Sort Cluster Scores
(Post-Test Minus Pre-Test)

Regular Secondary

(N = 15)

Cluster	Mean Change	Standard Deviation	Univariate F	P less than
1	.07	2.60	.01	.9202
2	- .01	1.97	.00	.9850
3	- .06	1.40	.03	.8602
4	.27	2.07	.26	.6214
5	- .61	1.01	5.49	.0345
6	- .56	2.02	1.14	.3040
7	.02	2.05	.00	.9600
8	- .20	1.54	.26	.6164

[$F_{1,14}(.99) = 8.8616$]

F-Ratio for Multivariate Test
.5893 P less than .7629

[$F_{8,7}(.90) = 2.7516$]

Intern Secondary

(N = 30)

Cluster	Mean Change	Standard Deviation	Univariate F	P less than
1	- 4.34	8.12	8.58	.0066
2	.79	2.11	4.21	.0493
3	- .06	2.16	.02	.8763
4	- .43	3.21	.55	.4646
5	.38	2.06	1.03	.3184
6	- .65	2.75	1.68	.2051
7	.43	2.42	.94	.3397
8	- .24	1.79	.53	.4710

[$F_{1,29}(.99) = 7.5976$]

F-Ratio for Multivariate Test

2.0264 P less than .0908

[$F_{8,22}(.90) = 1.9668$]

Regular versus Intern Secondary
(Intern Minus Regular)

Cluster	Mean Difference in Change	Standard Deviation	Univariate F	P less than
1	- 4.41	6.84	4.17	.0474
2	.80	2.07	1.51	.2265
3	.00	1.94	.00	.9965
4	- .70	2.89	.60	.4448
5	.99	1.79	3.06	.0872
6	- .09	2.53	.01	.9084
7	.41	2.31	.31	.5797
8	- .04	1.71	.00	.9505

[$F_{1,43}(.99) = 7.2697$]

F-Ratio for Multivariate Test
1.0881 P less than .3955

[$F_{8,36}(.90) = 1.8510$]

Summary: The Q-Sort was analyzed by the BC TRY Cluster Analysis program, resulting in the identification of eight clusters of particularly discriminating value.

On the pretest, Q-Sort Cluster profiles were not significantly different for the two elementary groups, i.e., both the elementary student teachers and the elementary interns held similar liberal attitudes toward teaching. The same is true for the two secondary groups.

On the post-test, Q-Sort Cluster profiles of both elementary and secondary intern groups show significant differences (changes) from their pretest profiles, whereas those of the regular elementary and secondary groups do not show significant differences (changes). Both intern groups, elementary and secondary, achieved more liberal and progressive cluster scores on the post-test than on the pre-test of the Q-Sort. Thus it appears that internship curriculums do, in fact, bring about a greater degree of change in the attitudes of trainees and in a more liberal and progressive direction than do the traditional regular programs. This finding is equally applicable to both elementary and secondary intern programs.

Chapter 6 Summary and Conclusions

Hypothesis #1

"Trainees in the two internship programs will differ significantly from those in the two student teaching programs in background, personality characteristics, and attitude towards teaching, as measured by the demographic questionnaire, the OPI and the Crossman Q-Sort." The hypothesis is accepted for background and attitude, but is rejected for personality characteristics.

RE: demographic characteristics

The intern programs had more minority students, particularly blacks, and more men. They were older and more mature, more were married and had children, more were math-science majors; they had more clearly defined long-term professional goals, and more held bachelor's degrees from other than the University of California. Similarities among the four groups were in such characteristics as middle class backgrounds, place of birth, parents' occupations, parents' education, highest degree held at time of entry into the programs, and travel.

RE: personality characteristics

There were differences in and among the four programs, but there was no discernable pattern. The most that can be said is that the secondary regulars tended to deviate from the other three groups in the direction of being more intellectually disposed, having better emotional adjustment, being less practical in their outlook, and a greater tolerance for ambiguity.

RE: attitude toward teaching

All four groups were liberal in their attitude toward teaching, students, and schools.

Hypothesis #2

"Trainees in the two internship programs will not differ significantly from those in the two student teaching programs in intellectual achievement or vocational interest, as measured by the Terman Concept Mastery Test and the Strong Vocational Interest Blank." The hypothesis is accepted.

RE: intellectuality

There were no differences as measured by the Terman Concept Mastery Test nor in grade point average on admission to the program of choice. All four groups were high in intellectuality and equally so.

RE: vocational interest

There were no differences as measured by the Strong Vocational Interest Blank, indicating that interest in teaching was as strong among regulars as among interns.

Hypothesis #3

"Trainees in the two internship programs will differ significantly from those in the two student teaching programs in the amount and direction of change resulting from the impact of their curricular experiences, as measured by the OPI and the Crossman Q-Sort." This hypothesis is accepted, with the exception of elementary interns as measured by the OPI.

RE: personality characteristics

The GIP group did change, but surprisingly in the direction of being more conservative, i.e., less theoretical, less extroverted, less altruistic, exhibiting more anxieties, and more likeliness to seek conscious thought or overt action. The GIP showed a high pretest response bias, indicating an effort to "look good" at the time of admission, which must be taken into account in assessing the extent and direction of OPI measured change. The elementary interns' change was limited to Scale 8, "Impulse Expression". Both regular groups moved in a more liberal direction.

RE: attitude towards teaching

There were no differences at the start of the programs, as measured by the Crossman Q-Sort. All groups were liberally inclined in their attitude towards students and schooling. On the post-tests the two internship groups both achieved more liberal scores, indicating that these curriculums do have an impact on their trainees and that the change was in the direction of more liberal and progressive attitudes.

Hypothesis #4

"Trainees in the two elementary teacher preparation programs will differ significantly from those in the two secondary programs at both admission and 'graduation', as measured by the OPI and the Crossman Q-Sort." This hypothesis is rejected.

RE: the OPI

At admission, the two elementary groups and the GIP were indistinguishable from each other. Only secondary regulars were in some ways slightly different. At "graduation", both secondary groups were slightly different from the elementaries, but only the regulars were significantly different.

RE: the Crossman Q-Sort

All groups showed a strong liberal inclination.

Now let us review the three questions posed as the chief purpose of this investigation:

1. What personality traits, attitudes, interests, and intellectual achievement characterize students in the four programs at the time of admission?

The results of the investigation show that all four groups, at the time of admission to their selected graduate teacher education program, were liberal in their thinking and attitude, dedicated to teaching, very intellectual, and high in academic achievement.

2. What characteristics of the students are differentially distributed among the several programs?

The results of the study show the student teaching and intern programs, in fact, are attracting and selecting differently.

3. Do the personalities and attitudes of trainees in the four programs change as a result of one year of graduate professional education?

The results of the study show that all four groups, in fact, did change--attitudes more than personality characteristics, and the interns more than the student teachers.

A number of other studies of prospective teachers, using the OPI, have recently been made. How the findings of this study compare with those of other investigations bears comment at this point.

Previous Studies: In a study of the UCB regular secondary program, Thompson[1] found that the Complexity Scale of the OPI was significantly related to the students' responses to their curricular experience. Those with a high Co valued general support, freedom and independence, and help with details (in the order stated).

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1 Alvin H. Thompson, "The Secondary Teacher Experimental Program" (unpublished Ed.D. dissertation, University of California, Berkeley, 1965), pp. 86-87.

Bostwick[2], in a UCB study of the GIP, found that as interns progressed through the program they admitted to greater anxiety, as measured by the Anxiety Level Scale of the OPI. This she described as "a condition not wholly unexpected of individuals striking out on their own," which condition is an integral feature of the intern model. Both the Thompson and Bostwick findings are supported by the results of the current investigation.

In predicting teacher competence among experienced teachers, Howden[3] found that four OPI scales (Thinking Introversion, Theoretical Orientation, Estheticism, and Personal Integration) had a positive relationship; and that four scales (Social Extroversion, Altruism, Practical Outlook, and Masculinity-Feminity) had a negative relationship with teacher competence.

Murray[4], in a study of musical abilities of student teachers in the regular elementary program at UCB, found that the first six scales of the OPI (TI, TO, Es, Co, RO, and Au), were significantly related to aesthetic judgments in music. This finding seems to be related to the one in the present investigation wherein trainees in all four programs were more intel-

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2 Janis L. Bostwick, "An Interaction Approach to Self-Concepts of Candidates in Teacher Education Programs at the University of California, Berkeley" (unpublished Ed.D. dissertation, University of California, Berkeley, 1966), p. 47.

3 J. Robert Howden, "Predicting Teacher Competence Using the OPI and the ETAS." (unpublished Ph.D. dissertation, University of California, Berkeley, 1969), p. 103.

4 Edward P. Murray, "The Relationship of Aesthetic Judgments in Music, Personality Characteristics, and Music Training in Prospective Elementary Teachers," (unpublished Ed.D. dissertation, University of California, Berkeley), p. 60.

lectually disposed (Scales 1-4) and more liberal (Scales 5-6) than the normative group.

Bonnin,[5] in a dissertation designed to study the success of UCB's GIP interns found that those with higher success evaluations from principals and supervisors were lower in their Theoretical Orientation and higher in Thinking Introversion. The present study does not support Bonnin's findings.

Concluding Comments

The investigator was the Director of Teacher Education at UCB from 1956-1968. I not only administered and coordinated the four programs, but also, by choice, did some teaching and/or supervision in each of the four programs during those years. I was not surprised by the findings of this study. Frankly, they are about what I expected.

> RE: the students. I had observed and known from first-hand experience that each curriculum was attracting a high caliber student--intellectually and personality-wise. In the early years of the GIP (intern secondary curriculum) (1956-66), there is no doubt that it attracted a larger proportion of high quality candidates than did the regular program. But as time went on, the regular program staff were influenced by the rigorous selection procedures used by the intern secondary staff, and became more selective themselves. The "times" also helped. From the middle 60's on, there were

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5 Robert M. Bonnin, "The Assessment of Relationships Between Certain Personality Variables and Teacher Performance in Teaching Assignments of Higher and Lower Difficulty," (unpublished Ed.D. dissertation, University of California, Berkeley), p. 77.

many more applicants for the regular programs than they could accommodate (a condition the two intern programs enjoyed from their inception), as more young people became interested in teaching. Thus the regular programs too arrived at the time when their staff's could afford the luxery of being rigorously selective, and were.

Also about the same time (1965 on), teacher supply was catching up with demand, and the student revolution erupted at Berkeley. One result of the student revolt was the increasing number of more liberal, radical students who sought admission at Berkeley from all over the country, at both undergraduate and graduate levels. This "new breed" of students for whom the intern secondary curriculum had been a haven, now entered the two regular programs and the newly developed intern elementary program, displacing the young women whom I used to describe as "sweet young things--as interested in their M.R.S. degree as they were in a teaching credential."

The Vietnam draft also was a factor which effected the caliber of students in the programs at the time of the investigation. In an effort to escape from the draft, a number of bright, energetic young men were propelled into teaching--men who otherwise would have entered more risk-taking vocations than teaching, particularly through tradi-

tional preparation programs.

So much for comments about the findings of the study regarding the caliber, characteristics, and attitudes of the students. Now let's turn to the findings of a significantly greater impact by the GIP and elementary internship program on their trainees than was the impact of the two regular curriculums on their students.

RE: program impact. Here again I only was surprised that the two intern curriculums did not have a greater impact than they did. Even though the OPI and Crossman Q-Sort were selected to measure the expected changes I had anticipated, it is possible that the instruments were too dull for the job given them. The changes in both regular and intern students brought about by their curricular experiences are perhaps too subtle to submit to hard data measures of the type available on the commercial market. Another likelihood is that the time interval--9 months to 12 months--was too short for statistically significant measured change even in a compacted, strenuous professional fifth-year curriculum.

This raises the question of why the investigation did not extend the post-testing into a year or two beyond "graduation". There are a number of practical reasons (i.e., mobility of beginning teachers), which mitigated against such an approach. Beyond that is

the difficulty of assigning a cause and effect relationship even if statistically significant measured changes were found. Once on the job, so much of a teachers "press" comes from the job and the school environment that any relationship between change and the University's training program would strictly be speculative.

One final thought on the business of impact is the difference in the way the regular and the intern programs were organized, administered, and staffed. Having been staff in both curriculums (regular and intern), I can verify that the differences in these regards, briefly mentioned in Chapter 2, are in fact very major, and to a great extent may account for the greater impact on trainees of the two internship models. In each intern program, the same staff worked with the trainees from recruitment through to "graduation" 14-15 months later. They get to know the interns on a very personal and intimate basis, and vice versa. Staff and students quickly become colleagues--the one more experienced, the other less so--on a first-name basis. It was not unusual to see interns at your home on weekends, or to receive telephone calls for ideas on teaching strategies at 1 a.m. in the morning. The "family" or primary nature of this close personal relationship was the outstanding feature of the two Berkeley intern models. By contrast,

the most characteristic feature of the two Berkeley regular program models is fragmentation; regular program students were constantly pulled in several directions at once. On center stage for them was their student teaching assignment and the University staff who supervised it and carried on curriculum and instruction seminars concurrently. But in addition, there were other subject matter and professional courses to be fitted in somehow, all taught by different professors and with many of the courses and professors who taught them having little or no interest in the relationship to what they taught and the student's central interest and commitment to the public school classroom. The picture of the student teacher I gained was a busy, somewhat harrassed individual, rushing thither and yon from public school to campus, from one end of the campus to the other, serving a number of masters while his heart and head were in the public school classroom. No wonder the professional curriculum had lesser impact on him (her).

In view of the findings of this investigation, and these concluding comments, were there to be significant cutbacks in teacher education at Berkeley, because of newly imposed budget limitations, it would be logical and sensible to expect that the intern programs would be kept, even at the expense of cutbacks in the traditional programs.

But, in fact, when the time for cutbacks came--such was not the case. It was the two intern programs which were sacrificed in toto in order to preserve the two traditional curriculums. How and why this occurred is another study, not a part of this investigation. Suffice it to say that the research is grateful that the investigation was made when it was--the last year that UCB offered these four curriculums.

Appendices

		page
I	Sampling Procedures	108
II	Demographic Data: GIP, 1956-64 vs. 1969-70	120
III	Instructions for the Crossman Q-Sort	123
IV	Crossman Q-Sort Items	125
V	Q-Sort Pre- and Post-Test, By Items	130
VI	Correlation Matrix for OPI and Q-Sort	138

Appendix I

Sampling Procedures

pp. 108-119

Appendix I

Sampling Procedures

The samples of teacher trainees first chosen for this assessment were considerably larger than those ultimately used. This Appendix is concerned with the representativeness of the final samples, for both the Regular programs and the Internships.

Fifty Regular elementary and fifty Regular secondary student teachers were originally selected using tables of random numbers from those entering the programs in the fall of 1969. Only twenty-eight in the elementary and thirty-two in the secondary samples actually participated in any pre-tests, and only fifteen elementary and eighteen secondary subjects completed the post-tests as well. To yield equal sample sizes, three subjects were dropped at random from the latter group.

It is reasonable to assume that the same influences caused some individuals to miss the post-tests as caused others to miss the pre-tests, particularly since an attrition of approximately fifty percent occurred for both groups at both stages of testing. Hence, we can test the similarity of the sub-samples used in the study to the full group by comparing it with the group that completed only the pre-test on the important demographic and personality variables.

Table XX and Table XXI reveal that there are no significant differences between the two sub-samples consisting of those " in " the study and those " out " of the study. Thus, we can be confident about the decisions based on the two samples of size fifteen used in this assessment.

Table XX

Comparison of Sub-Samples: Regular Elementary

Proportion of Males

	In	Out	Total
Male	0	1	1
Female	15	12	27
Total	15	13	28

Not Significantly Different

Proportion of Blacks

	In	Out	Total
Black	0	0	0
Not Black	15	13	28
Total	15	13	28

Not Significantly Different

Proportion Married

	In	Out	Total
Married	4	5	9
Not Married	11	8	19
Total	15	13	28

$\chi^2 = .421$ Not Significant

Multivariate Test of Equality on the OPI

D.F.	F-Ratio	P less than
14, 10	.9706	.5330

(No OPI pre-tests on three subjects)

Table XXI

Comparison of Sub-Samples: Regular Secondary

Proportion of Males

	In	Out	Total
Male	1	0	1
Female	14	12	26
Total	15	12	27

Not Significantly Different

Proportion of Blacks

	In	Out	Total
Black	0	0	0
Not Black	15	12	27
Total	15	12	27

Not Significantly Different

Proportion Married

	In	Out	Total
Married	2	3	5
Not Married	13	9	22
Total	15	12	27

Not Significantly Different

Proportion in Physical Science

	In	Out	Total
P.S.	0	0	0
Not P.S.	15	12	27
Total	15	12	27

Not Significantly Different

(No demographic data on four subjects)

Multivariate Test of Equality on the OPI

D.F.	F-Ratio	P less than
14,16	.5820	.8426

Table XXII

Comparison of Sub-Samples: Intern Elementary

Proportion of Males

	In	Out	Total
Male	8	3	11
Female	22	9	31
Total	30	12	42

$\chi^2 = .006$ Not Significant

Proportion of Blacks

	In	Out	Total
Black	6	3	9
Not Black	24	9	33
Total	30	12	42

$\chi^2 = .110$ Not Significant

Proportion Married

	In	Out	Total
Married	18	3	21
Not Married	12	9	21
Total	30	12	42

$\chi^2 = 3.84$ Significant: .05 level

(No demographic data on four subjects)

Multivariate Test of Equality on the OPI

D.F.	F-Ratio	P less than
14,31	1.8654	.0729

For the Intern programs, all of the participants entering in the fall of 196 were in the original samples. Thirty-one of forty-six elementary Interns and thirty-two of seventy-two secondary Interns completed the testing. Again, subjects were dropped at random for equal n and to make the samples proportional to the Regular samples.

On tests similar to those performed on the Regular program samples, the elementary Intern sub-samples show significant differences in the proportion of married students and in OPI profiles. As previously noted, a re-test of the proportions of married students in the Regular and Intern elementary programs using all subjects does not prove significant, as can be seen in Table XXIII. A re-test with complete samples for the OPI, in contrast, agrees with the earlier decision of Table IX. The new F-value of 1.1453, with 14 and 56 degrees of freedom, has a probability less than .3419, only a little smaller than the earlier result. See Table XXIII A.

Thus, in spite of the differences between the thirty Interns in the sample and the sixteen out of the sample used in the assessment, only one decision is changed, and we can be reasonably confident that the decisions involving post-tests are valid. In fact, given the great number of tests and size of the confidence levels, contradictory results are to be expected on occasion and should not be the cause of great concern.

Table XXIII

Re-Test for the Proportion of Married Students at the Elementary Level

	Regular	Intern	Total
Married	9	21	30
Not Married	19	21	40
Total	28	42	70

$\chi^2 = 2.187$ Not Significant

Table XXIII A

Elementary OPI Pre-Test Scores: Complete

Scale	Regular Mean (N = 25)	Intern Mean (N=46)	Univariate F	P less than
1	28.28	30.17	1.79	.1848
2	30.04	21.17	.89	.3501
3	14.80	16.32	2.56	.1141
4	16.04	18.09	2.36	.1291
5	33.76	35.20	1.25	.2676
6	17.16	16.78	.09	.7631
7	23.68	22.54	.66	.4181
8	28.64	29.15	.05	.8315
9	38.32	39.74	.46	.5011
10	14.00	14.93	.99	.3243
11	25.88	24.89	.90	.3456
12	9.24	8.70	.27	.6062
13	23.68	25.72	2.91	.0928
14	14.84	14.87	.00	.9780

[$F_{1,69}(.99) = 7.00$]

F-Ratio for Multivariate Test

1.1453 P less than .3419

[$F_{14,56}(.90) = 2.436$]

Scale	Regular S.D.	Intern S.D.	Pooled S.D.
1	5.76	5.65	5.69
2	5.69	4.34	4.85
3	4.07	3.71	3.84
4	5.21	5.44	5.36
5	5.42	5.03	5.17
6	5.88	4.49	5.02
7	4.40	6.16	5.61
8	9.16	9.90	9.65
9	7.42	8.94	8.44
10	3.85	3.76	3.79
11	4.01	4.28	4.19
12	4.67	3.98	4.23
13	5.81	4.18	4.81
14	4.37	4.25	4.29

The secondary Intern sub-sample used for the assessment seems to reflect the total group much better than was the case with the elementary Intern sub-sample. Table XXIV shows that there are no significant differences on the variables tested between those in the sub-sample and those out of it.

Finally, it should be emphasized that all of the subjects were participants in their respective programs in one year only, 1969-1970. Hence, to generalize to the past and future one must assume consistent admission policies and curriculum practices. These assumptions cannot be tested with the available data.

Table XXIV

Comparison of Sub-Samples: Intern Secondary

Proportion of Males

	In	Out	Total
Male	12	19	31
Female	18	23	41
Total	30	42	72

$\chi^2 = .189$ Not Significant

Proportion of Blacks

	In	Out	Total
Black	2	5	7
Not Black	28	37	65
Total	30	42	72

$\chi^2 = .528$ Not Significant

Proportion Married

	In	Out	Total
Married	16	19	35
Not Married	14	23	37
Total	30	42	72

$\chi^2 = .448$ Not Significant

Proportion in Physical Science

	In	Out	Total
P.S.	10	10	20
Not P.S.	20	32	52
Total	30	42	72

$\chi^2 = .938$ Not Significant

Multivariate Test of Equality on the OPI

D.F.	F-Ratio	P less than
14,56	1.0119	.4551

Appendix II

Demographic Data: GIP, 1956-64 vs. 1969-70

pp. 120-122

Table 1

Place of Birth of Secondary Interns
by Geographic Area

Area	1956-1961 Number	1956-1961 Percent	1968 Number	1968 Percent
West	141	46	24	80
Midwest	70	21	1	3
South	20	6	2	7
East	71	21	1	3
Foreign or Unknown	31	10	2	7
Total	333	100	30	100

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Table 2

Ages of Secondary Interns

	1956-1961	1968
Median	27	24
Mean	27.5	24.3

Table 3

Sex of Secondary Interns

Sex	1956-1961 Number	1956-1961 Percent	1968 Number	1968 Percent
Male	142	42	12	40
Female	191	58	18	60
Total	333	100	30	100

* * * * * * * * * * *

Table 4

Marital Status of Secondary Interns

	1956-1961 Number	1956-1961 Percent	1968 Number	1968 Percent
Married	173	52	16	53
Not Married	160	48	14	47
Total	133	100	30	100

Table 5

Previous Vocations of Secondary Interns

Number	1956-1961 Number	1956-1961 Percent	1968 Number	1968 Percent
Professional, Managerial, or Technical	79	23	10	33
Clerical	62	19	3	10
Skilled and/or Semi-Skilled	49	15	1	3
Unskilled	0	0	0	0
Farmers	0	0	0	0
None	143	43	16	54
Total	333	100	30	100

Appendix III

Instructions for the Crossman Q-Sort

pp. 123-124

Instructions for the Crossman Q-Sort

This is an investigation of teacher-pupil relationships in which the focus is on the identification of factors important in teaching and relating to students. You will not be asked to answer questions, but rather to indicate your opinions on a number of issues by sorting through a set of cards.

You have received 98 cards in all. On each card is written a sentence having to do with attitudes toward youth and teaching. Some of these sentences will be descriptive of your attitudes and how you behave in relation to your teaching. There will also be many statements which are not descriptive of your behavior and attitudes. You are being asked to indicate the degree to which each statement describes your behavior and attitudes toward youth and teaching by the way you arrange the cards you have been given.

Together with the cards, you have received 7 envelopes with different lab s as follows:

1. These are most descriptive.
2. These are quite descriptive.
3. These are fairly descriptive.
4. These are neither descriptive nor undescriptive.
5. These are fairly undescriptive.
6. These are quite undescriptive.
7. These are most undescriptive.

You are to pick out 14 cards for each of these envelopes.

You Should Proceed Like This:

1. Take the cards and shuffle them a bit first.

2. Go through all the cards and arrange them in three piles: one pile for the sentences which for the most part are descriptive of your behavior and attitudes, one pile for those which for the most part are not descriptive, and one pile for those you are not certain about. It does not make any difference how many cards you put in each of these three piles, but you will find it a bit more convenient if each pile contains roughly equal numbers.

3. Now take the pile containing cards which you have said describe you and pick out 14 cards which are most descriptive of your attitudes and behavior. Put these on top of envelope number 1. Do not put them inside yet, as you might want to change some of them later.

4. Next pick out those 14 cards which you think are quite descriptive of your behavior and put those on top of envelope number 2.

5. Now it is best to begin at the other end. Take the pile containing cards which for the most part are not descriptive and pick out

those 14 cards which are least descriptive of you. Put these on top of envelope number 7.

6. Then pick out the 14 cards which are quite undescriptive and put them on envelope number 6.

7. In all, you now have 42 cards left over. These are now to be sorted into three new piles with 14 cards in each: 14 which are fairly descriptive of you, 14 which are neither descriptive nor undescriptive, and 14 which are fairly undescriptive. Then put these on the envelopes where they belong.

8. Finally, you should check all seven piles to see if there are 14 in each. If you now want to change your mind about the position of a card, you can exchange it for another, but be sure there are always 14 in each pile.

You, as many others, may find it difficult to put exactly 14 cards in each envelope. Perhaps you may wish to put more in some envelopes and fewer in others. It is essential, however, that you follow these directions exactly, in spite of the constraint you may feel.

When you are finished you may put the cards into the envelopes in which they belong.

If this investigation is to have value, it is, of course, very important that you try to sort out the cards in such a way that you give an honest and correct description of your attitudes and behaviors.

When you have completed the card sortings, put the seven envelopes into the large envelope and seal it. The entire procedure should take about half an hour.

Thank you very much for your cooperation.

Appendix IV

Crossman Q-Sort Items

pp. 125-129

1. I think schools should concentrate on the fundamentals.
2. My teaching reflects my own variations in mood.
3. I think schools have been too ready to assume functions that properly belong to the family and other institutions.
4. I often change my teaching plans for a period in order to capitalize on a spontaneous classroom situation.
5. If a student isn't motivated when he comes to school, there is little a teacher can do to help him.
6. I respect my students' opinions and encourage the expression of them.
7. In planning for instruction, I usually take into account class preferences.
8. I encourage my students to be curious, to explore, and to question.
9. I think young people should have time to think, daydream, and even loaf.
10. I think the school is usually to blame in cases of truancy and drop-outs.
11. I think schools are spending too much time and money on the education of inherently incapable pupils.
12. I feel that standards of work should vary with each pupil.
13. I believe that "lack of application" is one of the most frequent causes for failure.
14. I think that many students suffer under heterogeneous grouping.
15. To be an effective disciplinarian with teen-agers, one needs to be "hard-bioled."
16. I think that order, discipline, and courtesy are essential in the classroom.
17. I think maintaining discipline is the teacher's greatest problem.
18. I have strict, well-established rules for my classes.
19. I do not allow my classes to question my decisions.
20. I think we tend to pamper youth too much these days.
21. I think it is important to follow a definite routine for each class.
22. I do not allow my students to get angry with me.
23. I teach my students to keep control on their feelings at all times.

24. I think it is unwise to let young people be by themselves a lot without supervision from grown-ups.

25. I think students should be held to more rigid standards of cleanliness and dress.

26. I think that students should show more respect for teachers and other authority figures.

27. I believe that physical punishment is sometimes the only way to handle a problem.

28. I remind my students that in one way or another we are punished for our misdeeds.

29. I believe that criticism makes young people improve.

30. I punish my students by taking away some of the privileges they otherwise would have.

31. I give my students extra privileges when they behave well.

32. At times it is necessary that the whole class suffer when the teacher is unable to identify the culprit.

33. I punish my students by isolating them for awhile.

34. I find it difficult to punish my students.

35. I threaten punishment more often than I actually give it.

36. I believe that praising a student when he is good gets better results than punishing him when he is bad.

37. I talk it over and reason with a student when he misbehaves.

38. I trust my students to behave as they should, even when I am not in the room with them.

39. I feel that the majority of students take their responsibilities seriously.

40. I feel that most pupils are resourceful when allowed to work on their own.

41. I find some of my greatest satisfactions in working with my students.

42. I encourage my students to assume more responsibility for their own learning.

43. I think students should be allowed more freedom in planning their own studies.

44. Most young people eventually outgrow undesirable behavior if left alone.

45. My students are a bit of a disappointment to me.

46. I expect a great deal of my students.

47. I teach my students that they are responsible for whatever happens to them.

48. I think too few students place sufficient value on grades.

49. I dread class discussions which bring up questions of sex.

50. I think it is a proper function of the schools to provide sexual information to students.

51. I feel that competition is good for young people.

52. I think that competition with peers is one of the most effective motivators.

53. I think more limitations should be placed upon student behavior at extra-curricular activities such as dancing.

54. I enjoy participating in extra-curricular activities with my students.

55. I prefer that my students not try things if there is a chance they will fail.

56. I worry about the unfortunate things that can happen to children as they grow up.

57. I think one has to let a young person take many chances as he grows up and tries new things.

58. I step in when a student is being ridiculed by his friends.

59. I tend to be too easy on my students.

60. I think student evaluations of teachers have little worth.

61. It is important to me that I am liked by my students.

62. Students who go along with group norms often have trouble thinking for themselves.

63. I find the non-conforming student exciting to work with.

64. I often carry out small-group activities within my classes.

65. A school's activity program should be a vital element in its life.

66. I feel uncomfortable when discussions touch upon areas about which I know little.

67. I think a teacher should steer away from discussions on controversial subjects.

68. It upsets me when I cannot establish contact with or "reach" a student.

69. I try to develop a real understanding of each of my students and his problems.

70. I encourage my students to talk to me about their troubles.

71. I show my students that I like them.

72. I am easy-going and relaxed with my students.

73. I make sure that my students know that I appreciate what they try or accomplish.

74. I think students deserve to be given reasons for any restrictions placed upon them.

75. I sometimes feel that I am too involved with my students.

76. I joke and have fun with my students.

77. I like to have parents come to discuss their children with me.

78. I think a teacher can't get anywhere with a student if the parents are not interested.

79. When I am angry with a student, I let him know it.

80. I think sarcasm is sometimes the best way of putting a point across.

81. There is a good deal of conflict between my students and me.

82. I believe that students should appreciate how much their teacher sacrafices for them.

83. I think young people ought to be exposed to all kinds of different people and ideas.

84. I would like to participate in team teaching.

85. I sometimes forget the promises I have made to my class.

86. I put the needs of my own life before the needs of my students.

87. I find it rewarding to teach those students who are usually in the slower classes.

88. I feel that a teacher should not be expected to do work for which he is not paid.

89. I think a teacher should always expect to have at least a few failures.

90. I think that establishing a healthy social climate in the classroom should be a major goal of the teacher.

91. I think students presume too much familiarity toward teachers these days.

92. I think there is no excuse for students who do not bring required materials to class.

93. I become annoyed when I have to repeat directions several times.

94. I think that the teaching of patriotism should be an important part of the school curriculum.

95. I think that more discipline problems could be handled by the office.

96. I find it very frustrating when my students don't seem to "catch on."

97. I think students are really concerned with their dignity and respect.

98. What a student expresses is more important than how he expresses it.

Appendix V

Q-Sort Pre- and Post-Test, By Items

pp. 130-137

Q-Sort: Regular Elementary Pre-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	3.8000	1.2649	50	2.8667	1.4573
2	5.2667	1.3345	51	3.4667	1.1872
3	5.1333	1.1872	52	4.2000	1.2649
4	1.4000	.7368	53	5.4667	.9155
5	6.1333	1.5976	54	3.3333	1.6330
6	1.4000	.7368	55	5.5333	1.7674
7	2.7333	1.2799	56	4.0000	1.6036
8	1.2667	.4577	57	2.6667	1.3452
9	2.6667	1.2344	58	3.4667	1.3558
10	4.6667	1.5430	59	4.8000	1.6987
11	6.4000	.9856	60	5.9333	1.2799
12	1.8000	.9411	61	2.8667	1.5976
13	4.0000	1.8516	62	4.3333	1.5430
14	5.3333	1.6762	63	3.8667	.9155
15	6.6667	.6172	64	2.2000	1.0823
16	1.9333	1.2228	65	3.2000	1.0823
17	4.2667	1.6242	66	5.1333	1.2459
18	4.0000	1.2536	67	6.4000	.9103
19	6.3333	1.1751	68	2.4667	1.7674
20	5.4667	1.4075	69	1.4000	.7368
21	4.9333	1.9074	70	2.6667	1.1751
22	5.2000	1.3732	71	2.0667	1.0998
23	5.1333	1.5523	72	2.5333	1.2459
24	5.4000	1.5492	73	1.4667	.7432
25	5.2667	.9612	74	1.5333	1.1255
26	3.9333	1.4376	75	3.7333	1.9074
27	5.6000	1.4041	76	2.8667	1.3558
28	4.7333	1.5796	77	2.2000	1.0823
29	5.2000	1.6125	78	5.6000	1.4541
30	4.4000	1.1212	79	2.8667	.9904
31	3.7333	1.3870	80	5.5333	1.5523
32	5.0000	1.8516	81	6.7333	.4577
33	4.0667	1.4376	82	6.0667	.8837
34	3.9333	1.7512	83	1.6000	1.5492
35	5.2000	1.2649	84	2.7333	1.4376
36	2.1333	1.8074	85	5.6667	1.0465
37	1.9333	1.0998	86	4.6667	1.3973
38	4.2667	1.6242	87	3.4667	1.5055
39	3.4000	1.3522	88	5.4000	1.8048
40	3.4667	1.3558	89	3.6000	1.9567
41	1.3333	.7237	90	2.0667	.8837
42	2.0000	.8452	91	5.2000	1.5213
43	3.2667	1.6242	92	5.8000	1.0823
44	5.4667	1.3558	93	4.6000	1.4541
45	6.2667	1.1629	94	4.4667	1.5976
46	3.9333	1.6242	95	6.0000	1.0000
47	4.0667	1.5796	96	3.6667	1.7995
48	5.7333	1.0998	97	2.2667	1.4864
49	5.8667	1.2459	98	1.6667	.7237

Q-Sort: Regular Elementary Post-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	4.4667	1.9223	50	2.7333	1.3345
2	4.2667	2.0862	51	4.0000	1.3093
3	5.4000	.9856	52	4.4667	1.3558
4	1.9333	.8837	53	5.8667	.8338
5	6.1333	.9904	54	2.8667	1.1872
6	1.4667	.5164	55	5.6667	1.2344
7	2.5333	1.1255	56	3.9333	1.4864
8	1.2667	.4577	57	2.6000	1.5946
9	2.7333	1.3870	58	3.4667	1.3558
10	4.8000	1.0823	59	4.5333	1.3020
11	6.4667	.8338	60	5.7333	.8837
12	1.7333	.7988	61	3.1333	1.5976
13	4.1333	1.5976	62	4.2667	1.6676
14	4.9333	1.4376	63	3.4000	1.5024
15	6.2000	.6761	64	2.3333	1.2910
16	3.2000	1.7403	65	2.8000	1.0823
17	5.2000	1.6125	66	4.8667	1.5055
18	4.4000	1.1832	67	6.2000	1.3202
19	6.8000	.4140	68	3.0667	1.9445
20	5.5333	1.4573	69	1.8667	1.3020
21	5.4000	1.4541	70	2.3333	.9759
22	5.8000	1.3202	71	1.8000	1.0823
23	5.2000	1.3202	72	2.0667	1.1629
24	5.3333	1.2344	73	1.4667	.7432
25	6.0000	1.0000	74	1.4000	.9103
26	4.8000	1.3202	75	4.1333	1.9591
27	5.8000	.9411	76	2.0000	1.0000
28	5.3333	1.3973	77	3.0000	1.5584
29	4.6667	1.2344	78	4.8667	1.6417
30	3.6000	1.1832	79	3.2000	1.4736
31	3.4667	1.5523	80	5.3333	1.6330
32	5.2667	1.5796	81	6.3333	1.1751
33	4.0000	1.6036	82	5.7333	1.3870
34	4.0000	1.7321	83	1.8667	1.4573
35	4.3333	1.8387	84	3.8667	1.9952
36	1.8000	1.0142	85	5.0667	1.7099
37	1.5333	.7432	86	4.4667	1.1255
38	3.3333	.9759	87	3.6000	1.8048
39	2.8667	.9155	88	5.0000	1.8516
40	3.2000	1.0823	89	3.0000	2.2039
41	1.8000	1.0142	90	2.2667	1.5796
42	1.9333	.9612	91	6.0000	1.0000
43	2.6667	1.2910	92	4.9333	1.8310
44	5.0667	1.4864	93	4.0000	1.7728
45	6.2000	.9411	94	5.8000	1.3732
46	3.1333	1.3020	95	5.8667	1.7265
47	4.6000	1.4541	96	4.2667	1.4864
48	6.2667	1.0328	97	2.5333	1.5523
49	5.7333	1.3345	98	1.4667	.8338

Q-Sort: Regular Secondary Pre-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	4.4000	2.0976	50	2.6000	.6325
2	3.2000	1.0823	51	3.9333	1.7915
3	5.4000	1.2984	52	3.6667	1.7995
4	1.6000	.8281	53	6.3333	1.0465
5	5.8667	1.5055	54	3.2667	1.4864
6	1.3333	.6172	55	5.8000	1.2649
7	2.3333	1.3973	56	4.6000	1.5024
8	1.4000	.7368	57	2.2667	1.7915
9	1.5333	.7432	58	4.0667	1.2799
10	4.2667	1.7512	59	3.7333	1.7915
11	6.2667	1.0328	60	5.5333	1.8465
12	1.6667	.7237	61	2.6667	1.4960
13	3.6000	1.6818	62	3.6667	1.2344
14	5.0667	1.4864	63	2.9333	1.8310
15	6.2667	.9612	64	3.2000	1.0142
16	3.4000	1.5492	65	2.8667	1.1255
17	5.2667	1.5796	66	4.4000	1.8822
18	5.6667	1.2910	67	6.8000	.4140
19	6.6667	.6172	68	2.4000	1.3522
20	4.8000	1.6562	69	2.0667	1.2799
21	4.6000	1.5946	70	3.2667	1.2228
22	5.6000	1.1212	71	1.8000	.9411
23	5.6667	1.4475	72	2.3333	1.3452
24	5.6000	1.4041	73	1.3333	.6172
25	6.2000	1.0823	74	1.4000	.6325
26	4.5333	1.7265	75	4.7333	1.3345
27	6.2000	1.1464	76	2.2667	1.0328
28	5.8667	1.2459	77	3.1333	1.3559
29	3.4667	1.4075	78	5.2667	1.2228
30	4.6000	1.5024	79	3.8000	1.2071
31	4.2667	1.4376	80	5.3333	1.5887
32	5.3333	1.5430	81	6.0667	.7037
33	6.0000	1.3093	82	5.5333	1.2459
34	2.7333	1.5796	83	1.2667	.5936
35	3.7333	1.7099	84	3.1333	1.2459
36	1.5333	.7432	85	4.8667	1.6847
37	2.2667	1.1629	86	4.1333	1.4075
38	4.2667	1.4864	87	4.0667	1.5796
39	3.8000	1.6987	88	5.2667	1.7512
40	3.5333	1.6847	89	3.4000	1.9198
41	1.6667	1.0465	90	2.2667	1.1629
42	2.0000	1.0000	91	5.4000	1.5946
43	3.0000	1.6475	92	4.8000	1.3732
44	4.8667	1.5523	93	4.3333	1.4960
45	5.1333	1.3558	94	5.4000	1.3522
46	3.4667	1.1872	95	5.5333	1.1872
47	4.3333	.9759	96	3.8667	1.5055
48	5.8000	1.0823	97	1.9333	1.0998
49	6.0000	1.0000	98	2.4667	1.7265

Q-Sort: Regular Secondary Post-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	4.2000	1.0823	51	4.2000	1.7403
2	3.6000	.9899	52	4.0000	1.5036
3	5.8667	1.2872	53	4.3333	.8165
4	1.4000	.3071	54	2.7333	1.2536
5	5.8000	1.2071	55	6.1333	.9904
6	1.3333	.6172	56	4.6000	2.0284
7	2.7333	1.2459	57	1.6000	.8071
8	1.3333	.6172	58	3.2000	1.3202
9	1.9333	1.2228	59	3.2667	1.4864
10	4.2333	1.7095	60	1.3333	.8165
11	6.4000	.9103	61	2.3000	1.2649
12	2.2000	1.0823	62	4.0000	1.3093
13	4.0000	1.2536	63	2.8000	1.4757
14	4.8000	1.3075	64	2.9333	1.3333
15	5.6667	1.3973	65	2.4000	1.6541
16	3.2667	1.1629	66	5.2667	1.4864
17	5.4000	.9899	67	6.3333	1.3020
18	5.9333	1.3598	68	2.2000	1.2071
19	6.2000	1.1489	69	2.2667	1.2799
20	5.1333	1.0427	70	3.0000	1.1539
21	5.2000	1.0787	71	2.0000	.7559
22	5.8000	1.1489	72	1.7333	1.1629
23	5.9333	1.2228	73	1.8667	.9904
24	5.6000	.9899	74	1.8000	1.3732
25	5.8000	1.0142	75	4.6667	1.3387
26	5.0000	1.0142	76	2.3333	1.4960
27	6.0000	1.2536	77	3.0000	1.6034
28	5.9667	1.4073	78	4.6000	1.8048
29	4.2667	1.7915	79	3.4000	1.3522
30	4.4667	1.3483	80	5.4000	1.6583
31	4.2000	1.7809	81	6.2667	1.0328
32	5.2667	1.3870	82	5.0667	1.5875
33	5.2333	1.5712	83	1.2000	.5606
34	3.8333	1.3462	84	3.4000	1.5024
35	2.8667	2.0983	85	3.2000	1.0823
36	1.6000	.7368	86	2.7333	.9812
37	1.8667	.8338	87	4.0000	1.4142
38	3.7333	1.6096	88	4.8000	1.0997
39	4.1333	1.1235	89	3.2000	1.6997
40	3.8000	1.2071	90	2.1333	1.2079
41	1.8667	.9159	91	5.8333	1.4573
42	2.0000	1.1922	92	5.0000	1.2136
43	2.9333	1.3599	93	4.6000	1.4142
44	4.3333	1.8648	94	5.6667	1.3973
45	5.4667	1.5523	95	5.2667	1.4375
46	3.8000	1.4041	96	3.4667	.8259
47	3.6000	1.2984	97	2.2000	.9421
48	5.0000	1.1339	98	2.2000	1.4736
49	6.0000	1.1926			
50	2.8000	1.5213			

Q-Sort: Intern Elementary Pre-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	3.7000	1.6006	50	2.6000	1.0372
2	4.1333	1.5025	51	3.6000	1.7340
3	5.5667	1.1043	52	4.1333	1.7367
4	2.1333	1.1366	53	6.1000	.9229
5	6.5000	.8200	54	2.8333	1.3153
6	1.7000	1.1492	55	5.5667	1.1651
7	2.8667	1.3830	56	3.7000	1.6640
8	1.3333	.6065	57	2.2000	1.2704
9	2.7333	1.5071	58	3.2000	1.4948
10	4.8333	1.6833	59	5.0000	1.2594
11	6.6667	.6065	60	5.7667	1.3309
12	1.7667	.9714	61	2.9667	1.6709
13	3.8667	1.9070	62	4.2000	1.6274
14	4.4667	1.6344	63	3.4333	1.5241
15	6.1667	1.2058	64	3.1667	1.4875
16	2.8000	1.4716	65	3.1333	1.1059
17	4.5333	1.8144	66	4.7667	1.5906
18	3.9000	1.4704	67	6.5667	.6789
19	6.1333	.8996	68	2.0333	1.4735
20	5.5000	1.5481	69	1.6667	1.1842
21	4.4667	1.9780	70	2.6667	1.5830
22	5.3667	1.4016	71	1.9000	1.1847
23	5.7667	1.4547	72	2.9333	1.1427
24	5.0667	1.3113	73	1.8000	1.2704
25	5.7667	1.3566	74	1.6333	.8087
26	5.0000	1.5536	75	4.0000	1.8754
27	5.5667	1.5241	76	2.9000	1.6474
28	5.5333	1.3322	77	2.2667	1.1121
29	4.9667	1.4259	78	5.0333	1.4016
30	3.2333	1.2507	79	3.2667	1.4666
31	3.3333	1.3476	80	5.9333	1.1121
32	4.9667	1.6078	81	6.2000	1.1265
33	3.9000	1.2415	82	6.1333	1.1366
34	4.5000	1.5029	83	1.4333	.6789
35	4.4333	1.6333	84	3.4000	1.6103
36	1.7000	.9879	85	5.1000	1.2959
37	2.1667	1.3153	86	4.4000	1.4527
38	4.1000	1.5391	87	3.5000	1.4324
39	3.6667	1.4933	88	5.4667	1.6965
40	3.3000	1.4657	89	3.4667	1.6965
41	1.5333	1.1366	90	1.9000	1.2134
42	2.1000	1.0939	91	5.7000	1.1788
43	3.0667	1.5071	92	5.7333	.9072
44	5.4667	.9732	93	4.4333	1.2229
45	5.8667	1.4077	94	4.7667	1.9061
46	3.2667	1.4126	95	5.6667	1.0933
47	4.2333	1.5687	96	4.0667	1.6802
48	5.8333	1.1472	97	1.7000	1.0222
49	6.0000	.9469	98	2.4000	1.4994

Q-Sort: Intern Elementary Post-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	4.3333	1.5556	51	3.5333	1.4640
2	3.0667	1.2047	52	4.1333	1.4320
3	5.2333	1.1381	53	5.2333	1.0055
4	3.0667	1.1927	54	2.5667	1.3097
5	4.3000	.7024	55	5.5333	1.2025
6	3.4333	.8261	56	4.0000	1.8270
7	2.7667	1.2507	57	2.1667	.9359
8	1.5000	.7702	58	3.0333	1.3797
9	2.5000	1.3025	59	4.2333	1.0835
10	4.5000	1.4782	60	5.3667	.9359
11	6.7333	.9943	61	3.4333	1.7127
12	2.3667	1.5709	62	4.4000	1.4919
13	4.6333	1.7317	63	2.7000	1.5005
14	5.0000	1.7041	64	2.7000	1.2077
15	6.2667	1.2579	65	3.6000	1.0005
16	3.2000	1.7809	66	5.0000	1.0309
17	4.8667	1.6920	67	5.4667	.8158
18	4.5000	1.4365	68	2.3000	1.3270
19	6.4000	.7240	69	1.6333	.8067
20	5.3333	1.3000	70	2.6000	1.2404
21	4.3000	1.2300	71	2.0000	1.0823
22	6.0333	1.1392	72	2.3000	1.3005
23	5.2333	1.1005	73	2.0000	1.1172
24	5.7000	1.0394	74	2.2333	1.4005
25	5.8333	1.2817	75	4.9333	1.0317
26	4.7333	1.5071	76	2.3667	1.2725
27	4.6667	1.4225	77	2.0667	1.0483
28	5.3333	1.2030	78	4.4667	1.3030
29	5.6333	1.4015	79	2.5000	1.4927
30	3.2667	1.3173	80	5.7667	1.2760
31	2.8667	1.1585	81	4.1333	1.0437
32	5.3000	1.2655	82	5.9667	1.0502
33	3.3000	1.3429	83	1.4333	.8284
34	4.7000	1.7080	84	3.3667	1.7317
35	3.4333	1.4330	85	4.2333	1.1521
36	1.9333	1.3529	86	4.5667	1.3047
37	2.1000	1.2590	87	4.1667	1.5773
38	3.7000	1.3120	88	5.3000	1.4637
39	2.2333	1.4308	89	4.0667	1.5102
40	2.5667	1.3570	90	1.6333	1.1290
41	1.7667	1.2225	91	5.3000	1.1307
42	1.8667	1.2243	92	5.9333	.9444
43	2.7667	1.5323	93	3.3000	1.4324
44	5.1667	1.2517	94	5.9000	1.3303
45	5.8000	1.4946	95	5.7667	1.0400
46	3.1000	1.3222	96	3.3000	1.5469
47	4.2000	1.3458	97	1.6333	1.0140
48	2.5000	1.0955	98	2.0333	1.2172
49	6.0333	.8897			
50	3.1333	1.3060			

Q-Sort: Intern Secondary Pre-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	3.9333	1.7207	50	2.6000	.9322
2	4.8333	1.5555	51	3.3667	1.5643
3	5.6000	1.0034	52	3.7333	1.5298
4	1.8000	1.2704	53	5.2667	1.2847
5	6.6333	.4901	54	2.5000	1.0748
6	1.2333	.5040	55	5.8000	1.2429
7	3.1000	1.5614	56	4.2667	1.8557
8	1.0333	.1826	57	2.3667	1.1290
9	2.8667	1.5477	58	3.3667	1.4259
10	5.1667	1.2341	59	4.7333	1.5298
11	6.2333	1.1943	60	5.7667	1.2780
12	2.4333	1.4782	61	2.8000	1.0306
13	3.6333	1.7905	62	3.9667	1.3257
14	4.8000	1.5844	63	3.1333	1.6554
15	6.2000	1.3746	64	2.8667	1.2521
16	2.4000	1.6316	65	3.2333	1.3309
17	5.0333	1.7317	66	5.1667	1.3153
18	4.0000	1.2865	67	5.7000	1.7840
19	5.8667	1.3322	68	2.4667	1.4077
20	5.0667	1.4606	69	1.3667	.7184
21	4.7667	1.6333	70	2.5000	1.3065
22	5.0333	1.4735	71	1.8000	.7144
23	5.2333	1.2229	72	2.3667	1.2172
24	5.0667	1.5742	73	1.6333	.8503
25	4.8667	1.5477	74	1.8000	1.2429
26	4.3333	1.4933	75	4.4000	1.5222
27	5.9333	1.2299	76	2.8333	1.2058
28	4.9333	1.9640	77	2.2333	1.1043
29	4.7333	1.6174	78	5.4333	1.5687
30	4.1000	1.4937	79	4.3333	1.2685
31	3.4667	1.2521	80	5.9667	1.4259
32	5.1667	1.2341	81	6.2667	1.2015
33	5.2667	1.5071	82	5.9000	1.1552
34	4.2000	1.5844	83	1.5333	1.2243
35	5.0667	1.5298	84	2.7333	1.0148
36	1.2333	.4302	85	5.8667	1.4077
37	2.2000	1.1861	86	4.9333	1.5071
38	2.6333	1.0662	87	3.4667	1.4559
39	2.9667	1.4967	88	5.2000	1.4479
40	2.7333	1.3113	89	3.7333	1.6802
41	1.3000	.7022	90	2.3667	1.3767
42	1.7000	1.1188	91	5.3667	1.1290
43	3.2000	1.6897	92	5.3333	1.2685
44	5.1000	1.3222	93	5.2333	1.5687
45	5.6000	1.1017	94	4.8667	1.5477
46	3.0667	1.3374	95	5.6333	1.1885
47	4.3667	1.3767	96	4.6000	1.6316
48	5.5333	1.0743	97	2.0000	1.1142
49	5.5667	1.5241	98	2.3333	1.3218

Q-Sort: Intern Secondary Post-Test

Variable	Mean	S.D.	Variable	Mean	S.D.
1	4.7000	2.0000	51	3.8333	1.3794
2	3.2667	1.8557	52	3.7667	1.3400
3	3.2000	1.8274	53	3.7667	1.2700
4	2.1000	1.4227	54	3.7667	1.1943
5	5.1667	.9803	55	4.1333	.9752
6	1.6000	1.0372	56	4.9333	1.0933
7	2.7000	1.3667	57	2.2667	1.2254
8	1.6000	.7240	58	3.1667	1.1102
9	2.8333	1.8263	59	3.7333	1.3395
10	4.2667	1.4806	60	6.2000	1.4200
11	4.1667	1.3667	61	3.1333	1.0333
12	2.7000	1.3333	62	3.8667	1.3576
13	2.6333	1.7117	63	3.1667	1.7430
14	4.3333	1.3322	64	3.2000	1.9010
15	6.1000	1.2134	65	3.6000	.9002
16	3.8667	1.3276	66	5.8333	1.4554
17	4.9667	1.3023	67	6.3333	1.2421
18	5.0000	1.2530	68	2.8333	1.3576
19	4.3667	.8899	69	2.8333	1.1943
20	5.5667	1.3010	70	3.0333	1.3915
21	6.7000	1.3570	71	2.2667	1.2270
22	6.1333	.9732	72	3.1333	1.4702
23	5.8000	1.1202	73	1.7667	1.0332
24	5.5000	1.4227	74	2.0000	1.1142
25	5.8667	1.3573	75	4.8333	1.5102
26	4.4000	1.0801	76	2.3667	1.8294
27	6.0000	1.2034	77	2.1667	1.3525
28	5.4667	1.7367	78	5.1667	1.2617
29	4.8667	1.3913	79	3.0667	1.3762
30	3.9667	1.4733	80	5.3000	1.7536
31	3.8333	1.0601	81	3.8000	1.7340
32	4.3667	1.7087	82	5.9667	1.2452
33	4.5000	1.4527	83	1.6667	1.4700
34	3.7000	1.3084	84	3.0000	1.3666
35	3.8000	1.7955	85	5.2667	1.2071
36	1.8000	.7311	86	4.5000	1.3009
37	2.7667	1.2447	87	3.9000	1.7251
38	3.7333	1.3045	88	5.2667	1.3850
39	3.3333	1.3579	89	3.7333	1.3742
40	3.4000	1.3000	90	1.9667	.9554
41	2.1000	1.3503	91	5.7333	1.2243
42	1.7000	1.2077	92	4.8000	1.3253
43	2.2667	1.3577	93	3.8667	1.4905
44	4.9667	1.4010	94	5.4000	1.7340
45	4.7667	1.9061	95	5.2333	1.2507
46	2.7000	1.3423	96	3.8667	1.4794
47	3.3667	1.3510	97	2.7000	1.1136
48	1.0667	.9469	98	2.4667	1.3030
49	5.5667	1.3062			
50	2.5333	1.2575			

Appendix VI

Correlation Matrix for OPI and Q-Sort

pp. 138-139

CORRELATION MATRIX: OPI SCALES AND Q-SORT CLUSTERS)

	1	2	3	4	5	6	7	8	9	10	11
1.	1.000	.560	.660	.623	.146	.108	.095	.310	.019	.039	.327
2.	.560	1.000	.312	.473	.039	.213	.200	.213	.095	.202	.251
3.	.660	.312	1.000	.575	.211	.102	-.070	.392	-.194	-.139	.197
4.	.623	.473	.575	1.000	.423	.217	-.062	.534	-.128	-.030	.245
5.	.146	.039	.211	.423	1.000	.362	-.363	.308	-.140	-.186	-.012
6.	.108	.213	.102	.217	.362	1.000	-.118	.243	-.087	-.010	-.244
7.	.095	.200	-.070	-.062	-.363	-.118	1.000	-.080	.377	.404	.414
8.	.310	.213	.392	.534	.308	.243	-.080	1.000	-.464	-.280	-.118
9.	.019	.095	-.194	-.128	-.140	-.087	.377	-.464	1.000	.544	.406
10.	.039	.202	-.139	-.030	-.186	-.010	.404	-.280	.544	1.000	.199
11.	.327	.251	.197	.245	-.012	-.244	.414	-.118	.406	.199	1.000
12.	-.465	-.240	-.365	-.649	-.649	-.217	.252	-.207	.072	.130	-.275
13.	-.013	.362	-.307	-.034	-.236	-.061	.082	-.203	.381	.492	-.048
14.	.150	.476	-.142	-.059	-.474	-.163	.511	-.370	.559	.474	.413
15.	-.249	-.166	-.350	-.591	-.676	-.388	.302	-.253	.163	.177	-.169
16. 2	-.158	-.220	-.064	-.085	.143	-.037	-.319	-.013	-.321	-.120	-.349
17. 3	-.010	.122	-.094	-.012	-.188	-.225	.228	-.224	.355	.143	.177
18. 4	.011	-.127	.113	-.070	-.138	-.292	.067	.068	-.105	-.192	-.241
19. 5	-.008	.011	-.202	-.136	-.146	-.037	-.055	-.012	.002	-.130	-.216
20. 6	-.182	-.217	-.151	-.205	.043	-.043	-.232	.026	-.314	-.238	-.089
21. 7	.271	.265	.315	.182	.119	.195	-.118	.194	-.182	-.180	-.075
22. 8	.154	.007	.196	.074	.073	.123	-.060	.092	-.234	-.101	-.156

OPI SCALES: VARIABLES 1-14 Q-SORT CLUSTERS: 15-22

CORRELATION MATRIX: OPI SCALES AND Q-SORT CLUSTERS

	12	13	14	15	16	17	18	19	20	21	22
				1	2	3	4	5	6	7	8
1.	-.465	-.013	.160	-.249	-.158	-.010	.011	-.008	-.182	.271	.154
2.	-.240	.362	.476	-.166	-.220	.122	-.127	.011	-.217	.265	.007
3.	-.365	-.307	-.142	-.350	-.064	-.094	.113	-.202	-.151	.315	.196
4.	-.649	-.034	-.059	-.591	-.085	-.012	-.070	-.136	-.205	.182	.074
5.	-.649	-.236	-.474	-.676	.143	-.188	-.138	-.146	.043	.119	.073
6.	-.217	-.061	-.163	-.388	-.037	-.225	-.292	-.037	-.043	.195	.123
7.	.252	.082	.511	.392	-.319	.228	.067	-.055	-.232	-.118	-.060
8.	-.207	-.203	-.370	-.253	-.013	-.224	.068	-.012	.026	.194	.092
9.	.072	.381	.559	.167	-.321	.355	-.105	.002	-.314	-.182	-.234
10.	.130	.492	.474	.177	-.120	.143	-.192	-.130	-.238	-.180	-.101
11.	-.275	-.048	.413	-.169	-.349	.177	-.241	-.216	-.089	-.075	-.156
12.	1.000	.231	.164	.676	-.016	.061	.236	.056	.021	-.107	.023
13.	.231	1.000	.475	.195	-.058	.240	-.069	.022	-.201	.021	-.105
14.	.164	.475	1.000	.282	-.286	.395	-.166	.122	-.269	-.055	-.152
15. 1	.676	.195	.282	1.000	-.097	.171	.231	.242	-.061	-.155	-.074
16. 2	-.016	-.058	-.286	-.097	1.000	-.126	.063	-.021	.137	.087	.179
17. 3	.061	.240	.395	.171	-.126	1.000	.137	-.006	-.015	.048	-.272
18. 4	.236	-.069	-.166	.231	.063	.137	1.000	.151	.037	-.026	.168
19. 5	.056	.022	.122	.242	-.021	-.006	.151	1.000	.086	.039	.155
20. 6	.021	-.201	-.269	-.061	.137	-.015	.037	.086	1.000	-.033	.078
21. 7	-.107	.021	-.055	-.155	.087	.048	-.026	.039	-.033	1.000	.109
22. 8	.023	-.105	-.152	-.074	.179	-.272	.168	.155	.078	.109	1.000

OPI SCALES: VARIABLES 1-14 Q-SORT CLUSTERS: 15-22